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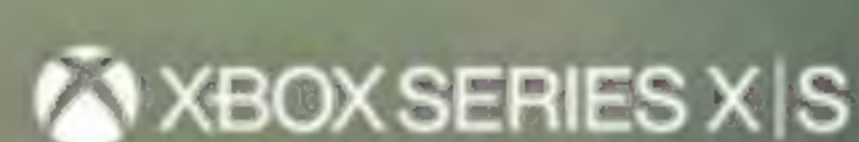
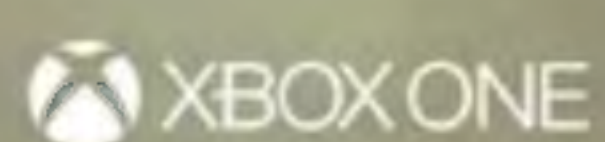
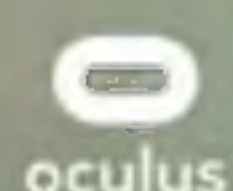
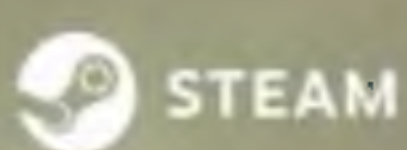
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Waking the 'wooden wonder'

A new Mosquito restoration takes to the air – rarely are we treated to better news than this in the historic aviation world!

With the recent first flight of T.43 'NZ2308' – the one that started it all – we provide a tribute to the late Glyn Powell who tracked down Mosquito parts from all over the world and made the all-important moulds to enable the building of new, airworthy-standard fuselages. Without his great efforts, we simply would not see those majestic Mosquitos airborne today.

Also, with thanks to photographer Gavin Conroy and warbird maestro Steve Hinton, we hear the latter's thoughts about flying the 'wooden wonder'. Our Mossie intro is followed by a look at one of the Luftwaffe's potent multi-role twins, the Junkers Ju 88, as Barry Wheeler focuses on the so-called 'Schnellbombers' that were captured by the Allies.

This month's Classic aircraft type is the Consolidated Catalina flying boat/amphibian whose crews stalked the fearsome submarine menace in the world's vast oceans. I'm sure many of you will have spoken to veterans who described their general wartime experience as "hours of boredom punctuated by moments of sheer terror". Such words would seem to typify the challenge befalling the vigilant sub-hunters,

who may often have seen nothing of note during many hours of patrolling, or conversely might have found themselves embroiled in desperate battles far from friendly shores, as Andrew Thomas explains.

The sea is a lonely place when you are injured and in danger, and with that in mind we pay tribute to John Cruickshank VC, the last living Victoria Cross holder of World War Two. He is due to celebrate his 104th birthday as this edition goes to press and everyone at *FlyPast* wishes him well.

Continuing the theme of lonely tasks faced by aircrew, Steve Richards recalls the story of three Luftwaffe 'lone raiders' – three separate post-bombing photo-reconnaissance missions that ended badly for their crews. Meanwhile, in Leicestershire, a churchyard visit prompts Ken Ellis to reflect on the exploits of a wartime bomber station that's now a thriving business estate.

Staying in the present, we are treated to an airborne sortie alongside Darren Harbar as he captures the nostalgic elegance of a sole survivor, the Shuttleworth Collection's inter-war Hawker

Tomtit. Old Warden, Shuttleworth's atmospheric and much-loved home, also features in Bob Barton's memories of organising airshows at the famous airfield.

From nostalgia to new flyers, and from past to present, I hope you enjoy this varied issue.



Editor

Tom Allett

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De Havilland T.43 Mosquito NZ2308 flying in March following an impressive restoration in New Zealand. See page 6 Gavin Conroy

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Mosquito airborne

Another Mossie has flown in New Zealand. Jamie Ewan recounts the history of NZ2308 while Tom Allett speaks to pilot Steve Hinton



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A churchyard visit helps Ken Ellis reflect on the exploits of a Leicestershire bomber station that's now being used as a thriving business estate

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Victoria Cross

We salute RAF Coastal Command veteran John Cruickshank, the last living recipient to have been awarded the VC during World War Two



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Three Luftwaffe photo-recce missions encountered deadly opposition

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Consolidated Catalina

FLYPAST CLASSICS

Andrew Thomas reflects on the many perilous Catalina operations in 1942 flown in defence of Arctic convoys

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The Catalina Society's David Legg reveals the winter work required to prepare Britain's only airworthy PBY for the airshow season

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South African Cats

The Catalinas of 262 Squadron and its successor established a fine reputation when it came to hunting U-boats, as Andrew Thomas reveals

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THE LEADING MOVEMENT...

The story of how the late Glyn Powell tracked down Mosquito wrecks and parts around the world and made the all-important moulds to enable the building of new, airworthy-standard fuselages is well-known. But it was NZ2308 that led the way – as *FlyPast's* **Jamie Ewan** reveals

Below

A wonderful air-to-air study of NZ2308 back where 'she' belongs in the hands of legendary warbird pilot Steve Hinton on March 20.

Who could have imagined we would have five airworthy Mosquitos in 2024?

Gavin Conroy

It's a feat that until just a few years ago many thought impossible, but the world now has five airworthy de Havilland Mosquitos. Incredibly, four of these have come from the workshops of Ardmore, New Zealand-based Avspecs. The first, in 2012, was Jerry Yagen's FB.26 KA114. The Flying Heritage & Combat Armor Museum's T.Mk.III TV959 in late 2016 and what is now Charles Somers' FB.VI PZ474 in January 2019 followed, the team having learnt a great deal about the type, its intricacies, the build

processes needed and the ins and outs of the details that need to be found or made. In fact, when it comes to rebuilding an airworthy Mosquito, arguably no other company in the world has such know-how and skills. This was further cemented when its latest masterpiece took to the skies for the first time in nearly 70 years on March 18, 2024. It was the culmination of an epic 15-year restoration started by the late Glyn Powell, the man who made the impossible possible. Owned by US warbird collector Rod Lewis and bound for his Texas-based Lewis Air Legends, that aircraft is T.43

NZ2308. Planned as an early production FB.40 – the Australian equivalent of the FB.VI fighter-bomber/intruder variant powered by licence-built Packard Merlins 31s, later 33s – in accordance with Contract CS 520 for the Royal Australian Air Force (RAAF), the machine that went on to become NZ2308 was laid down by de Havilland Aircraft Pty at Bankstown near Sydney in 1944. One of more than 200 examples of the 'Wooden Wonder' built down under, the aircraft was allocated the RAAF serial number A52-20. However, several fatal accidents due to in-flight structural failures led to the Australian Mosquito programme being relentlessly interrupted. With investigations discovering manufacturing defects across several aircraft on the assembly line, it was suspected A52-20's mainplane was plagued by faulty gluing. Pulled off the line and diverted to the Service Department for inspection and rectification, its wing was quickly deemed unserviceable and condemned. With the wing removed from the aircraft and destroyed, the fuselage was placed in storage. There





Left
Groundcrew watch on as a crew prepare for another sortie out of Ohakea in NZ2308 during its time with 75 Squadron
Air Force Museum of New Zealand

almost all with 75 Squadron, while the rest were placed in storage. On June 11, 1947, A52-1054 left Amberley in the hands of wartime ace Wg Cdr John 'Johnny' Checketts, bound for RZNAF Station Wigram, some 200 miles southwest of New Zealand's capital Wellington. Arriving there later the same day, Checketts set a new trans-Tasman crossing record of 3hrs 58mins.

'Kiwi' Mossie

Allocated to the RNZAF with the serial NZ2308, the aircraft was delivered to 75 Squadron at Ohakea on North Island soon after. Brought on charge there two weeks later on June 25, it was assigned the unit code 'YC-Z'. While most of the Mosquitos acquired by New Zealand post-war never entered squadron service, NZ2308 was one of the exceptions. Retaining the FB.40's weaponry, NZ2308 took part in operational conversion, reconnaissance, interception, strike and search and rescue flights over the next four-and-a-half years. By then, the jet age had dawned and the first of the nation's new de Havilland Vampire FB.52 fighter-bombers had arrived. With the end nigh, NZ2308 was one of six examples displayed at Ohakea on March 29, 1952. This was to be the type's swansong in RNZAF service.

On April 17, 75 Squadron was instructed to ferry all of

Left
Although converted to a dual-controlled T.43 trainer while in Australia, NZ2308 retained its original armament – four nose-mounted Browning .303 machine guns and underwing rocket rails can be seen in this view circa 1951
Air Force Museum of New Zealand



it remained until 1946, when a decision was made to convert A52-20, along with 21 other FB.40s, to dual-control T.43 trainers for the RAAF. With the fuselage reconditioned and fitted with a new mainplane boasting a pair of Merlin 33s, the type's traditional disruptive camouflage gave way to an overall silver scheme and the serial number A52-1054.

On August 19 that year, the aircraft was issued to 3 Air Depot maintenance unit at Amberley, about 30 miles southwest of Brisbane, before being ferried to nearby RAAF Station Archerfield for storage that October, alongside the vast numbers of aircraft made redundant post-war. Remaining there well into 1947, it was one of four Aussie T.43s sold to New Zealand at a cost of £3,000 each – more than £147,000 today!

At the time, the Royal New Zealand Air Force (RNZAF) was anticipating the delivery of 76 Mosquito FB.VIs and four T.IIIIs from the UK, along with a sole Kiwi FB.40; only 22 of these aircraft entered service,

Below
Crews swarm around A52-1054 shortly after its arrival at RNZAF Station Wigram in the hands of Wg Cdr Johnny Checketts on June 11, 1947



Right

With just shy of 500 hours on the airframe, NZ2308 awaits 'her' fate at what is thought to be Woodbourne sometime after being withdrawn from service in 1952

Air Force Museum of New Zealand



its serviceable Mosquitos to Woodbourne near Blenheim on the South Island, where they would be stored pending disposal. On arrival, NZ2308's total airframe hours were recorded as 479.35, a far cry from the average 71 hours across the rest of the RNZAF 'Mossie' fleet. Declared to be surplus under Stores Release 83/55 on June 30, 1955, the aircraft was sold under Government Stores Board tender number 6326 to the ANSA Orchard Equipment Company, based in nearby Nelson. At the time, surplus aircraft were often bought for their hydraulics, wheels and various other components that could be employed on farming machinery. In fact, ANSA acquired NZ2308 – along with another 20 or

so other examples – with the intention of attaching their engines and propellers to trailers to tow around the apple orchards across the Nelson region and blow frost off the trees during winter. However, with this idea never getting off the ground, NZ2308 – by then with its wings sawn off, leaving just the centre section – was sold to tobacco farmer John Morgan in or around 1956 for just £10 (around £312 today) and moved about 20 miles northwest to his property in Riwaka. It was here that it remained in the open at the mercy of Mother Nature and the ravages of time.

New beginnings

Fast-forward to the late 1980s and a group based at

Ardmore began investigating the possibility of returning a Mosquito to the skies. Led by Owen Fenner, they formed a syndicate under the banner of Gulf Aeronautics to finance their efforts and began the arduous task of amassing more than 10,000 drawings and thousands of hours of research, visiting surviving examples and gathering tools, skills and resources, as well as many Mosquito parts from across the world.

By then, NZ2308 had been discovered by volunteers from the Auckland-based Museum of Transport and Technology (MOTAT), who were restoring the Mosquito it had acquired in 1967. That aircraft was NZ2305, ex-A52-19 and later A52-1053, another Aussie-built FB.40 later converted to a T.43. With the MOTAT obtaining what was left of NZ2308 for use in its efforts to rebuild NZ2305, they were later passed on to the syndicate. As such, it was selected as the identity of their rebuild. Confronted by the enormity of the task and confounded by the news that NZ2308's airframe could not be re-used, the syndicate gradually dissolved until just one member was left to carry the project forward. That was Glyn Powell, whose dream was to fly in a Mosquito. However, the challenge to return his 'Mossie' to the skies was huge. The sheer scale of the undertaking would daunt a lesser person, but Powell had a fitting quote attached to a photograph

Below

Waiting game: NZ2308 awaits transportation to Ardmore from Drury Hill in 2022

Gavin Conroy





of a Mosquito in flight: "Some people dream of worthy achievements, while others stay awake and do them." Glyn pressed ahead. While countless metal parts had survived, any made of wood were beyond use and would need rebuilding – a huge undertaking. The fuselage moulds and wing jigs had long gone, so they too would have to be recreated. Powell also had five containers full of metal parts and still didn't have all of them. He once said: "You just wouldn't believe how many metal parts there are in an aircraft built entirely of wood!" With sheer determination, he continued work on NZ2308 at his Drury Hill facility near Auckland under the Mosquito Aircraft Restoration (MAR) banner. Using countless drawings he had found, and formed in part using NZ2308, he built from scratch new moulds for the type's complex curved fuselage and jigs for its one-piece wing, as well as creating patterns, laminating, gluing, drilling and assembling everything himself. Glyn later observed: "Those in the know said this was impossible. I was now seriously contemplating the creation of not just one aircraft, but the essential components of a World War Two aircraft production line."

fuselage and wings, US warbird collector Jerry Yagen was looking for a new restoration project. Contacting Warren Denholm at Avspecs about any possibilities, he suggested Jerry meet with Glyn, having seen his devotion and world-leading craftsmanship to get NZ2308 into the air. Yagen acquired what remained of KA114, an early production FB.26 built at de Havilland Canada in early 1945, from the Canadian Museum of Flight and Transportation in British Columbia, striking a deal struck in 2004 to transfer them to New Zealand.

With NZ2038 on the back burner, Glyn and his team at MAR built KA114's fuselage, wing and tailplane, before the aircraft was moved to Avspecs for fitting out in late 2008. This collaboration helped push whole Mosquito programme forward and, as they say, the rest is history. As a result of continuing to build other aeroplanes for customers, progress on NZ2308 was slow but steady. With Avspecs as the prime contractor, the two companies collaboratively undertook the reconstruction of the wooden airframe and the restoration of sub-systems when time and finances allowed. Thus the aircraft was slowly returned to its former glory.

And while Powell never got to see his 'Mossie' in the air before his death in November 2019, he did get to fly KA114, the first example of the type to be rebuilt. Following his death, numerous groups and individuals from around the world looked at potentially purchasing the still unfinished NZ3208, including the UK-based Mosquito Pathfinder Trust, but nothing came of it. Finally, in 2022, NZ2038 was purchased by Rod Lewis. With the work finished by Warren Denholm and his Avspecs team, Glyn Powell's determination, vision and accuracy across some two decades finally took to the skies. This restoration is a true masterpiece of research and craftsmanship. It is the one that started it all. ●

Left
The hulk of NZ2308's fuselage sits in a sheep paddock at John Morgan's farm in Riwaka sometime in the 1960s. Bought by Morgan as a plaything for his children for just £10, one of his sons has since been reunited with the aeroplane
Air Force Museum of New Zealand



Left
A man with a dream, the late Glyn Powell revolutionised the warbird world with his vision, determination, skill, and craftsmanship...
Mosquito Aircraft Restoration

For the full story of NZ2308's epic restoration, see out sister title Aeroplane Monthly's June 2024 issue.

Below
One step closer: NZ2308 back on its 'feet' for the first time in nearly seven decades on October 26, 2023
Gavin Conroy



Final countdown

During the early 2000s, while MAR was working on what would become NZ2308's

MOSQUITO: FROM THE COCKPIT

Planes of Fame's **Steve Hinton** spoke to *FlyPast* after flying the latest 'Wooden Wonder' to take to the skies



Above
Not your average
selfie – airborne in
Mosquito NZ2308
Steve Hinton

It's right up there with the best [warbird] experiences I've had," says Steve Hinton when asked if flying a Mosquito is sheer joy or a trickier task.

Steve hardly needs an introduction in the warbird world; suffice to say he gained his pilot's licence at the age of 17 and first flew a Mustang aged 19. (There's more about his flying career within the accompanying panel.) He recalls his first paid pilot job was to fly an F-86 Sabre for the wartime USAAF fighter pilot Bob Hoover (who went on to be a test pilot and an extraordinary display pilot), exactly 50 years ago.

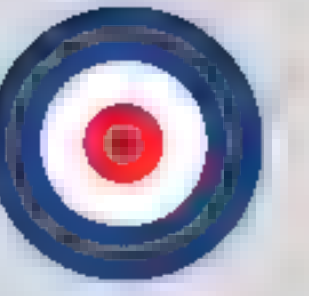
Steve describes Hoover as "quite a guy!" and explains how, through meeting the likes of

Hoover and other stellar names of the airshow circuit, pilots and owners, he eventually got the chance to fly the extensive list of famous types that fill his logbooks. He has flown almost all the major Allied fighters of World War Two, plus both a replica and a real Fw 190, but he has flown much of the heavier metal too. Multi-engine warbird experience includes the A-26, B-17, B-24, B-25, and Steve had just completed a flight on Lewis Air Legends' C-121 Constellation, for which he holds a left and right-hand seat type rating, shortly before this conversation with *FlyPast* took place. That wide range of experience, combined with the number of historic types still being restored to airworthy condition, continues to bring new opportunities to fly, as Steve

Right
Steve Hinton and
Warren Denholm
airborne in the
latest Mosquito
to take to the air,
NZ2308

All images Gavin
Conroy unless stated





puts it, “some pretty cool stuff” and Avspecs’ latest Mosquito masterpiece is a fine example of that. But how did the opportunity to fly the ‘Wooden Wonder’ evolve?

“My first Mosquito was the Canadian [B.35] example [VR796/CF-HML] which was restored over several decades and flew again in 2014. I knew Mel Johnstone, lead engineer on the restoration and Mike Nixon from [California-based] Vintage V12s that overhauled the engines also recommended me. Nobody was current on the Mosquito back then, but Mel and Mike knew me and knew I flew a lot of different

airplanes. I was able to get an authorisation to fly it. I spent a few weeks in Canada while the final inspections were taking place and took the opportunity to read a few books about flying the Mosquito and talk to a few Mosquito veterans. I was surprised to be able to meet the veterans – Canadians and British who had moved to Canada. They were very interesting gentlemen who told me about their experiences flying Mosquitos and we discussed the aircraft’s flying qualities. I learned a lot and it all contributed towards preparing me for my first flight in the type.”

Steve’s next Mosquito was another first post-restoration flight for the airframe in question, Rod Lewis’ New Zealand-based FB.VI, PZ474, in March 2019. Paul Allen’s T.3 ‘NS838’ – really TV959 – followed after it had been delivered to Seattle and, in New Zealand this March, Mk T.43, ‘NZ2308’, which, having been the star performer at the Warbirds Over Wanaka airshow, is currently being shipped to its new home with Lewis Air Legends in Texas. That makes four of the currently five airworthy Mossies Steve has flown; ‘Jerry’ Yegan’s

Below

The new Mosquitos are stressed to +6 and -3G, so can be rolled without any problems, but they are not performed repeatedly, or at low level

“My first impression of being in a British type 30 years ago was ‘why did they make it that way?’”





Above
Inside the cockpit
of NZ2308. In
Steve Hinton's
'American view'
the switches are all
upside down!

FB.26 KA114 is the missing example.

Cockpit layout

How does the Mosquito's cockpit layout rate with Steve? "Firstly, I should say that every country does things a little different and the Brits have always made amazing airplanes and, in the Rolls-Royce Merlin, produced one of the best engines ever built so 'hats off' to the Brits. But my first impression of being in a British type 30 years ago was 'why did they make it that way?' To me, the Mosquito's cockpit switches are upside down, you flip them down instead of up to switch things on – I don't know where that idea came from and I think the American [layout style] is better. That's just my opinion, everything still works!"

"The cockpit is a tight fit and things can be hard to reach; the mixture controls are so far behind you, you can't even see them, but if you have been exposed [to the 'upside down' aspect] before then it's not a shock. Those who experience a British airplane for the first time may think 'what the hell is that all about' but it doesn't bother me. I've seen it before and know where it has come from."

Star performer

Despite the Mosquito's outstanding wartime operational

reputation – it was a star performer in multiple roles – to this day it still has a somewhat soiled handling reputation due to its sometimes deadly single-engined performance. Although the Rolls-Royce Merlin was a highly dependable powerplant, failures were inevitable when they were often pushed to their performance limits day after day. There are numerous reports of wartime aircraft being lost when an engine failed during take-off or landing, but Steve, who now

has almost 50 flight hours on the type – 15 of them clocked up during his recent New Zealand visit – dismisses any concerns about the Mosquito's handling. "With the right training, supervision and understanding of how systems work, it's not a difficult aircraft to fly. I've flown aircraft that are more difficult to handle; the [Messerschmitt] 109, a real Focke-Wulf 190, and a replica, what people call a 'Fake Wulf' – they are two very different airplanes by the way – they might look the same, but they don't fly the same. By comparison, the Mosquito is much easier to fly. Anyone who has experience of flying a variety of airplanes, understands how different engines work [will be ok]; they are not difficult aeroplanes to fly."

Asked specifically about single engine performance, he adds: "The published VMC speed, [landing gear down; aircraft at gross weight and aft centre of gravity (CofG); left-hand engine not producing any power; left-hand propeller full fine pitch; right-hand engine at full power] the minimum speed at which control of the aircraft can be maintained



Right
Who says there's
no such thing as a
silver bullet?



Left
The second Mosquito airframe flown by Hinton was another first post-restoration flight for the aircraft in question, Rod Lewis' New Zealand-based FB.VI, PZ474, in March 2019

is 165kts, but when the undercarriage is up it is around 140kts. We do not operate at gross weight or aft CofG and we get the gear up right away. That reduces the VMC speed, so in my opinion it is very controllable.

"During a normal take-off run, when you push the throttles up to +12 which is around 1,450hp – a routine take-off power setting – there will be a period of about a minute-and-a-half from when you push the throttles up when,

if an engine quit completely, not producing any power at all, then you would have a big problem on your hands, but after that [90 seconds] the aircraft is controllable. If you think 90 seconds is a long time, think what the situation would be like in a single-engined airplane.

"Of course we don't fly warbirds like the wartime crews did. There's no bomb load on board or any kind of combat equipment onboard, so the aircraft is relatively light and pretty sporty. For a wartime crew with a fully loaded aircraft and an obstacle ahead of them then that's a situation to avoid getting into but, in my opinion, the way we fly allows you to operate the Mosquito with quite a safety margin before you would encounter a dangerous situation. It's a very manual airplane; a big airplane that flies like a big airplane, but you gain speed quickly and today's engines are very reliable... knock on wood!"

Steve explains how, despite their differences, the Mosquito variants share the same flying qualities but notes the bomber version – his first Mosquito – was "noticeably heavier" adding that the bomber was fitted with two-stage Merlins so the engines reach forward about an extra foot, making the torque on take-off more noticeable.

"Before take-off I was approached by several guys who, one by one, warned me to be careful of the torque – 'there's a lot of swing on take-off, she wants to turn left,' they said, and I politely thanked them all for their advice but thought to myself, I've flown Bearcats, Mustangs, P-38s, P-47s and I know what torque is all about but when I rolled on take-off I had to pull the right-hand engine back a little because the rudder wasn't enough to counteract the pull to the left so pulling the right wing back a little helped me to keep it going in a straight line down the runway. There's lots of redundancy and it's not an unsafe airplane by any means. Being heavier makes the bomber version a little slower to accelerate, but apart from that they largely fly the same.

"It's all new wood. The new-build aircraft are every bit as good as the originals in every way. The new aircraft are rated for +6 and -3 'G' but we rarely even get close to pulling +3G; there's no need to. We roll them, not at low-level or regularly but [rolling is] in the handbook. The Mosquito is not highly responsive; it's not an aerobatic type of airplane but it is stressed for rolling so we can do that and it's nice and



Right
Steve Hinton
peering out of
Lewis Air Legends'
Lockheed C-121A
Constellation 48-
0613 N422NA
Frank Mormillo

smooth. We're not performing loops or Cuban eights; there's no competition aerobatics. If you've been to Duxford and watched Pete Kynsey or Stephen Grey's performances over the years, where they perform graceful manoeuvres to show the beautiful lines of their aircraft; they're not trying to impress any judges... that's what to expect [from a Mosquito] – just a display of the equipment."

Asked how the flight experience compares with his all-time favourites Steve explains: "I can't say [Mosquito] is my all-time best experience. The quality of [a first flight] experience can be affected by the length of time you have been involved in a restoration and the great people you have worked with along the way. First flights are all memorable in their own way, but the overall experience isn't always about the aircraft, it's often about the 'journey' you took to get there."

Steve has distinct categories of favourite types to fly. "For a propellor aircraft, when you just want to have fun, fly formation or perform an air display, it's the Bearcat, but if you're talking jets then the [F-86] Sabrejet is my favourite, It's the type that sparked me into airplanes when I was a kid and I've been current on them for almost all of the last 50 years."

Despite all the wonderful types he has already flown, Steve has



Last time he looked, Steve Hinton (72) had gained approximately 12,000 total flying hours, none of which is commercial airline time. More than 9,000 hours were achieved on warbird types "with another couple of thousand spent on Cessnas, Beechcrafts, and things like that". Steve did work for an airline as a flight engineer for a while, but all his pilot time is essentially associated with airshows, movie work and, most of all with the now Chino, California-based Planes of Fame Museum, which he joined way back when it was known as The Air Museum and formed a team to make the collection airworthy. Today he estimates 80 to 90% of his flying is in warbird types.

Although now retired from air racing, he had a highly successful career in that field winning six Unlimited-class air races and two national championships. He also became the youngest person (aged 27) to hold a world air speed record after achieving 499.018mph over a 3km circuit in the highly modified RB51, Red Baron, in 1979. The record stood for ten years. He continues to fly for movie scenes and has already appeared in more than 60 films.

a 'bucket list' of types he would still like to fly and the first two he mentions are the Curtiss SB2C Helldiver and Douglas A-20 Havoc. Nevertheless, in terms of types flown he admits to having "already filled my boots many times" and pays tribute to Warren Denholm and his Avspecs team for producing the beautiful

Mosquitos he has been lucky enough to fly. "Avspecs is not some giant factory or huge corporation, but when you get the right people with the same goals together you can achieve wonderful things."

Roll on the day when a Mosquito returns to the UK airshow circuit. 🇬🇧

Below
Job done. Steve
Hinton and Warren
Denholm back on
the deck after a
flight in NZ2308



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Two-seat Spitfire flies in new colours



Spitfire Mk.IX SM520 flying in new colours recently Darren Harbar

Supermarine Spitfire Mk.IX SM520 (G-ILDA) has been repainted by its operator Spitfires.com following an overhaul. Based at Goodwood, from which it's possible for customers to fly in the two-seater (also see page 15), the aircraft's new livery represents Spitfire Mk.I X4382/LO-G.

The latter entered 602 Squadron service at RAF Westhampnett (now Goodwood) in September 1940. It was frequently flown by Plt Off

Osgood Hanbury, who used it to destroy a Messerschmitt Bf 110 on September 15 and went on to score a total of 11 victories. It was also flown on five occasions by Nigel Rose, who survived the war and died in 2017, aged 99.

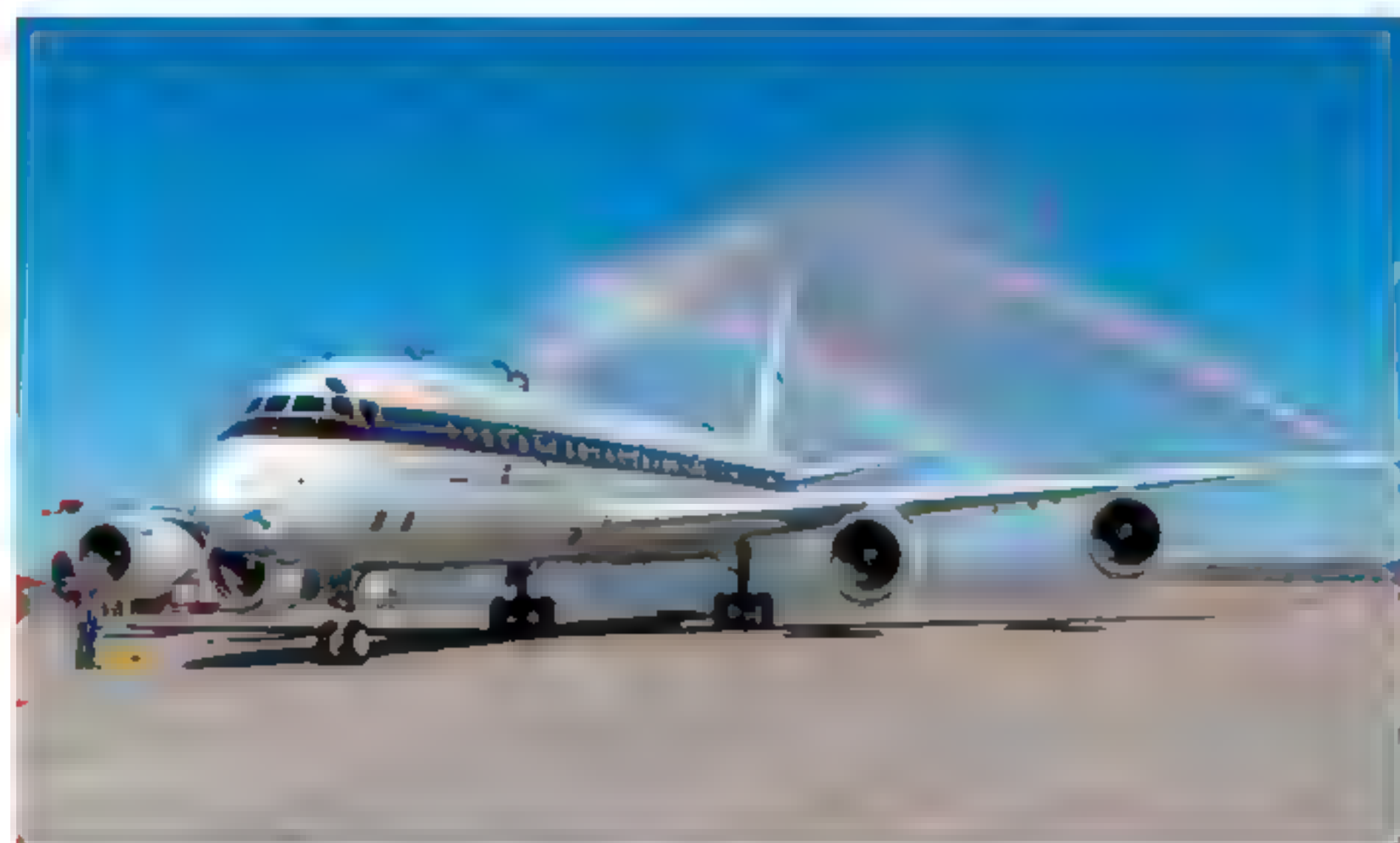
Spitfires.com said: "It means a lot to be able to commemorate the pilots and groundcrew of 602 Squadron, but in particular pay homage to Nigel, who was such a fabulous guest and passed on so much of his experiences to us."

DC-8 makes farewell mission for NASA

After nearly four decades with NASA, Douglas DC-8 N817NA completed its last airborne science mission when it returned to the agency's Armstrong Flight Research Center at Palmdale, California, on April 1.

Built in 1969, the jet flew with Italian flag carrier Alitalia as I-DIWK and Braniff International Airways in the US

as N801BN before being acquired by NASA in 1986. Since then it has flown in support of various projects serving the world's scientific community. The DC-8 will continue its educational legacy when it is transferred to a new home at Idaho's State University in Pocatello, where it will be used to train aircraft technicians.



NASA's DC-8 receiving a traditional water cannon salute at Palmdale on April 1 NASA Steve Freeman

New homes await Martin Mars giants



'Hawaii Mars' C-FLYL – seen here in 2006 – is being prepared for flight AirTeamImages-Keith Blincow

Coulson Aviation Group (CAG) has donated its huge four-engined *Hawaii Mars* amphibious fire-bomber to the British Columbia Aviation Museum in Canada, with *Philippine Mars* going to Pima Air and Space Museum in Tucson, Arizona.

Hawaii Mars served with the US Navy from 1946 to 1956, before being sold into civilian hands and converted into a firefighter. Taking up

this role as CF-LYL (later C-FLYL) in 1961 and ultimately ending up with CAG on Vancouver Island, the aircraft tackled more than 4,000 wildfires before being retired in 2015.

CAG is now preparing the giant for what will be its final flight. *Yankee-Lima* will fly to Patricia Bay near Victoria International Airport, before being brought ashore at the nearby Canadian Coast

Guard Station and towed to the museum. *Philippine Mars* will arrive at Pima later this year.

"This has been an exciting month for both Martin Mars waterbombers," said CAG boss Wayne Coulson. "As a fitting tribute to their years of service and the years of hard work by many people, we are pleased to see both Mars aircraft landing to rest at world class institutions."

Korean veteran Corsair christened 'Devotion'

The Siegerland, Germany-based Flying Legends collection has named its Korean War veteran Chance-Vought F4U-5NL Corsair after Adam Makos' 2015 book *Devotion*.

The book, which spawned a 2022 film of the same name, documents the selfless actions of LT JG

Thomas Hudner. On December 4, 1950, Hudner deliberately crash-landed his Corsair close to his downed wingman and friend, Ens Jesse Brown, in a bid to save him during the Korean War. The airmen were serving with the US Navy's VF-32

from the carrier USS *Leyte*. Brown, the USN's first African-American aviator, sadly succumbed to his injuries.

Acquired by the collection last year, the 1950-built Corsair served both the US and Argentine Navy and is currently registered D-FCOR.



Georg Rabb flying 'Devotion' on March 13 Darren Harbar

Bentwaters' T-33 transformation



The T-33 has recently emerged from a five-year restoration BCWM via Graham Haynes

In mid-April the Suffolk-based Bentwaters Cold War Museum (BCWM) finished its restoration of Lockheed T-33A Shooting Star 51-9252.

Built by Lockheed for the French Air Force in 1951, the jet served as a fighter trainer in central France coded 314-UY. Returned to the USAF in 1978, it was flown to the UK for disposal. Acquired by what is now the National Museum of

the USAF, it ended up on loan to BCWM, arriving in 2018.

Suffering from significant corrosion issues, the aircraft became a long-term restoration project for BCWM. It reappeared this year in markings worn by the Bentwaters-based 81st Tactical Fighter Wing T-33s during the early 1960s and is now back on display in the museum's compound.

'Jersey Jerk' makes its first UK flight



Fighter Aviation's former RAAF Commonwealth CA-18 G-JERK took to the skies from Sywell in Northamptonshire on May 5, in the hands of noted Australian warbird pilot Cameron Rolph-Smith. The aircraft represents P-51D Mustang 44-15152/QJ-T 'Jersey Jerk', the mount of Maj Donald J Strait during his time commanding the Martlesham Heath, Suffolk-based 356th FG 361st FS in 1944 Nigel Harrison

Historic Catalina finds home for restoration



Consolidated PBX-6A Catalina N9825Z has been brought by truck to Spokane from Moses Lake, both in Washington state. Reputed to be the last of 3,305 PBXs produced between 1936 and 1945, the

amphibian will be restored over two years to airworthy and seaworthy condition by Vintage Aircraft Restorations at Felts Field.

Unique to this PBX is a complete AN/APS-3 radar system

with external radar dome. The aircraft also features an original eyeball bow turret with two machine guns, original waist blisters with mounts for more guns, and a rotating mount for a tunnel machine gun under the

tail. Desks, tables and chairs are included within the cabin.

The originality of the aircraft owes much to Rick Peterson who spent more than 20 years travelling to crash sites and aircraft

'boneyards', also building relationships with veterans from whom he acquired numerous rare components. Susan Peterson shares her late husband's passion and continues his work today.

Swedish Spitfire moved within museum

The Swedish Air Force Museum's recreation of a reconnaissance Supermarine Spitfire Mk.XIX, designated 31051, has been given a new display space at the Linköping attraction. Previously suspended from the ceiling, it's now on a platform where it can be studied more closely. The exhibit was

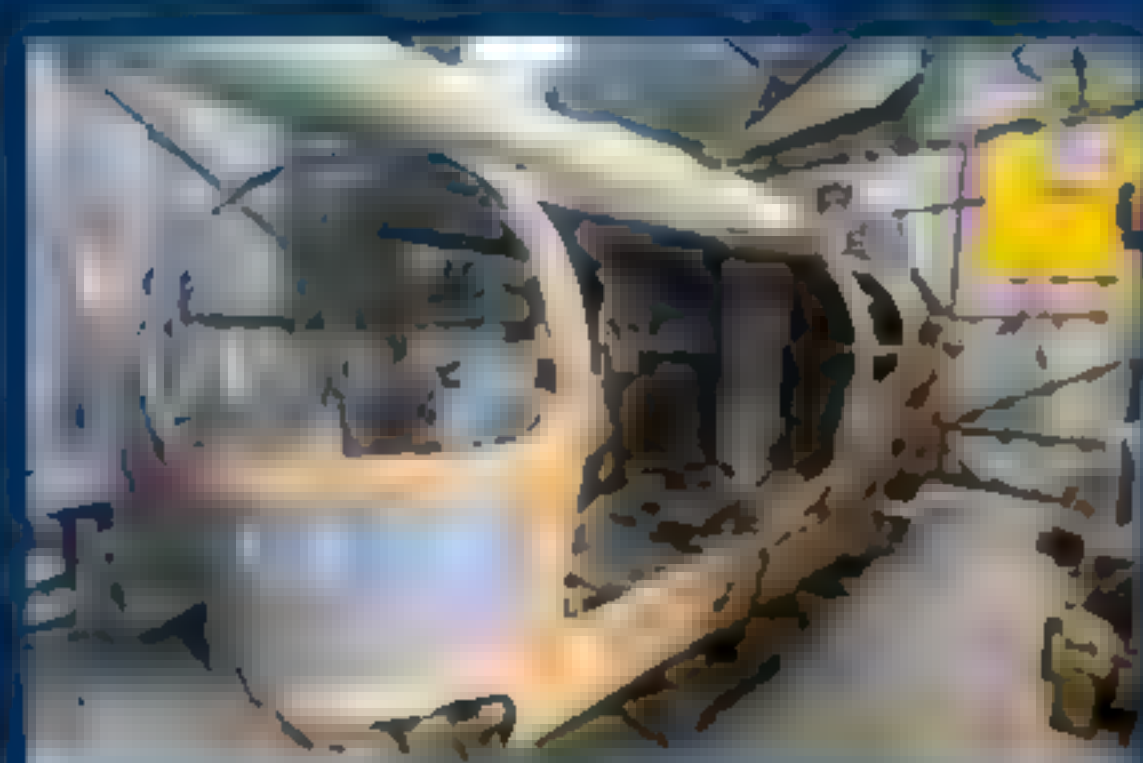
created from a fuselage and various other parts, mostly sourced in Canada during the 1970s. Although some 60 Spitfires were used by Sweden's Nyköping-based F 11 reconnaissance wing, none were saved.

Lennart Berns

Right Spitfire Mk.XIX '31051' in its new display location
Lennart Berns



briefings



The Yorkshire Helicopter Preservation Group is making progress with its restoration of Westland Dragonfly HR.5 WYN499. Based at Doncaster's South Yorkshire Air Museum, the Dragonfly will represent 194 Squadron's HC.4 XB251, a helicopter that participated in Operation Firedog, the RAF's contribution to the 1950s Malayan Emergency. SYAM

Examination of the remains of a Macchi MC.205 recovered from the sea off Pantelleria, Italy, last year has confirmed that it is MM9310, last flown by Sg Mg Alvise Andrich. He was shot down on June 8, 1943 and baled out safely. The Macchi was recovered in 2023 by the Italian Air Force in a joint effort with divers and various authorities. With thanks to Gian Spagnoletti

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Dawn breaks on D-Day to reveal the Allied invasion fleet approaching Juno Beach as the little town of St-Aubin-sur-Mer reverberates to the thunder of P-47 Thunderbolts from the 404th Fighter Group. Having set out in the dark with the aim of keeping the Luftwaffe away, by sunrise they headed back to base at Wikton to re-fuel.



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Typhoon gets a D-Day makeover at RAF Coningsby

FlyPast's Jamie Ewan caught up with this year's RAF Typhoon display pilot, Flt Lt David 'Turbo' Turnbull, during the unveiling of the team's new jet



Above: Flt Lt David 'Turbo' Turnbull is this year's Typhoon display pilot. KEY: Jamie Ewan

Right: Plt Off Denzil Jenkins poses with groundcrew on Hawker Typhoon Mk.Ib MN396 in mid-1944. It was this machine he was flying on D-Day. Via Chris Thomas

Almost as soon as the Eurofighter Typhoon entered frontline service with the RAF in 2006 many asked when, or even if, we would ever see an example of the advanced combat jet

painted to represent one of its 1940s Hawker predecessors. Some 18 years later it has finally happened.

On April 22, the RAF rolled out Typhoon FGR.4 ZJ913 at Coningsby, Lincolnshire, in a special commemorative scheme to mark the 80th anniversary of D-Day. Operated by 29 Squadron, the Typhoon OCU, ZJ913 will be the Typhoon Display Team's primary jet this season.

Display pilot Flt Lt David 'Turbo' Turnbull described the D-Day stripes as 'iconic'. "Ask anyone to visualise a Hawker Typhoon and I'm sure it would have those black and white markings," he said.

"The 80th anniversary of D-Day makes it

extremely appropriate – painting the jet this way allows us the opportunity to pay tribute to those who were serving at the time.

We want to express our gratitude to everyone who helped deliver what D-Day was – a huge stepping stone to the liberation of Europe."

Swapping its standard all-over grey livery for two-tone grey/green camouflage, tactical recognition flashes on the tail, yellow leading edges, plus invasion stripes and the codes 'FM-G', ZJ913 – nicknamed 'Moggy' – depicts the 257 Squadron Hawker Typhoon Mk.Ib

flown by Plt Off Denzil Jenkins on June 6, 1944.

Deciding which Hawker Typhoon to represent wasn't easy. "Eighteen units flew Typhoons on D-Day and a case could be made for any of them," David explained. "We considered many options for ZJ913 including Charles Green



Resplendent in its 257 Squadron markings, Eurofighter Typhoon FGR4 ZJ913/FM-G at RAF Coningsby on April 22. KEY: Jamie Ewan



scheme reflects the debt of gratitude we owe to those people, and all those who fought."

The jet, painted by a team from British multinational defence company Serco in Coningsby's Surface Finish Maintenance Facility, flew for the first time in its 257 Squadron colours on April 30.

Below: 257 Squadron pilots pose with a Hawker Typhoon at RAF Needs Oar Point in Hampshire shortly before D-Day - Pte Off Denzil Jenkins can be seen kneeling third from the right Via Chris Thomas

[who helped overcome the type's teething problems on its service entry before leading rocket-firing Typhoons against German armour in Normandy], John Baldwin [top-scoring Typhoon pilot], John Collins [a 245 Squadron pilot killed in action over France], Ronnie Fokes [257 Squadron's CO who elected to remain with them after D-Day, only to be killed six days later], and Richard Brooker [who led the Typhoons of 123 Wing throughout D-Day]. But it's been said that whereas the Battle of Britain was about 'The Few', D-Day was about 'The Many' and I think Denzil Jenkins fits that bill."

Joining 257 Squadron in August 1943, Denzil was commissioned in January 1944, became a flight commander in August, and took over as officer commanding that October – a meteoric rise through the ranks.

'Turbo' added: "He was one of thousands of 'ordinary' airmen fighting alongside thousands of 'ordinary'

soldiers and sailors on one of the most pivotal days in history. His exploits on the day, and in the weeks that followed, led to him rising rapidly to command the squadron and ultimately being awarded the Distinguished Flying Cross." Announced in the *London Gazette* on December 26, 1944, the recommendation for his DFC says it all – see panel.

It's thought that Jenkins flew at least four Typhoons with 257 Squadron coded FM-G: JP898 between October 1943 and January 1944, MN305 during March 1944, MN396 from April 1944 to the end of August 1944, and PD606 from late November 1944 to January 1945.

"We've done quite a bit of work to understand the role of the Typhoon on D-Day and across the Normandy campaign," David revealed. "Hundreds of pilots supported by many more people on the ground took part. Of those, 170 lost their lives with six killed on D-Day itself. This



DFC recommendation

"Squadron Leader Jenkins is the Commanding Officer of No.257 (Burma) Squadron, operating as Typhoon fighter-bombers in Belgium and Holland in support of the Army. He joined the squadron in August 1943, as a flight sergeant pilot, was commissioned in January 1944, became a flight commander in August, and squadron commander on October 14 – thus proving his worth in this meteoric rise. When he had completed his training as a pilot, he was appointed instructor at Ternhill [Service Flying Training School], and served there for two years. His continual requests for an operational posting were not immediately granted.

"In February 1943, he was posted to Gibraltar where for over six months as a leader of formations of eight aircraft he ferried 250 Hurricane IIc aircraft to Cairo, for the Russian campaign, losing only one aircraft during that time. In addition to carrying out both high- and low-level dive-bombing attacks against a wide variety of targets, including shipping, [V-I] sites, bridges, gun positions, railway marshalling yards, trains, airfields etc, he has successfully completed over 40 sorties with [rocket projectiles] directed against enemy communications, tanks, armoured fighting vehicles, radar stations, a Chateaux used as [enemy headquarters] and tunnels housing long range railway guns.

"On all these missions, intense flak was encountered, but despite this he invariably pressed home his attack to the limit, to ensure the complete success of the operation, without regard for his own personal safety. He nobly played his part in the vital preparations for the invasion, the destruction of enemy radar from Cap Gris-Nez to Cap de la Hague [in Normandy], thus effectively screening the approach of our vast armada on D-Day. As a squadron commander his intense keenness, tremendous vitality and enthusiasm for work are an inspiring example to his pilots, and under his fine leadership a happier or more efficient squadron would be difficult to find."


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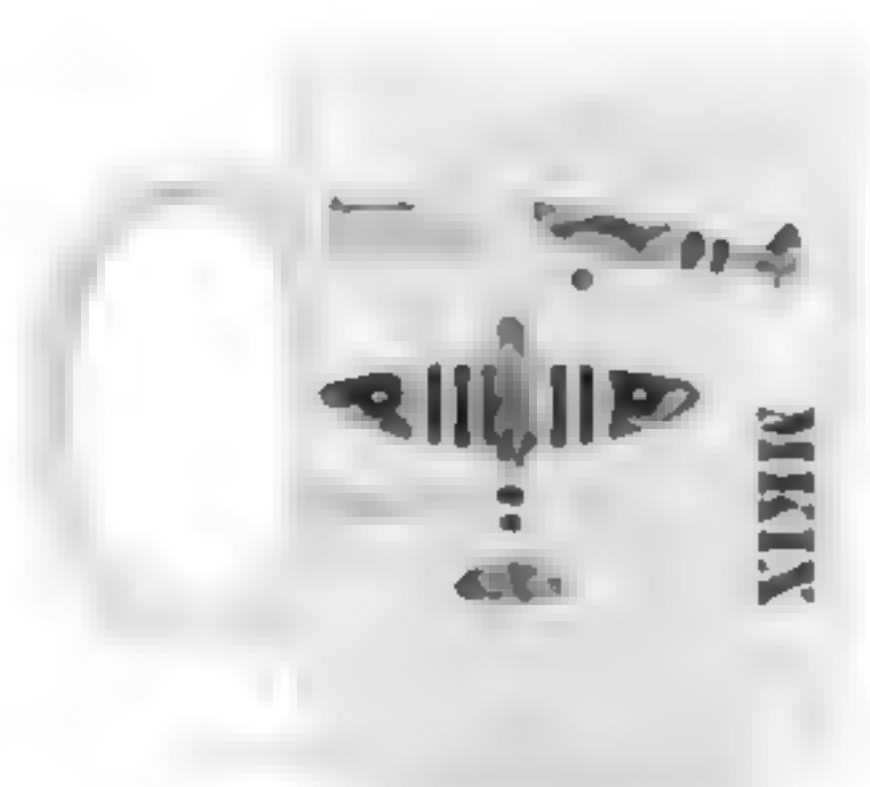
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Apache destined for Middle Wallop



The AH1 was due to be on display from mid-May Glenn Stanley via AFM

The Army Flying Museum at Middle Wallop in Hampshire has been allocated Apache AH1 ZJ244 for permanent display, making it the only place in the UK where the public can see the variant. The helicopter was expected to be put on display during

May, after the type was phased out of Army Air Corps service earlier this year.

The museum's chairman Maj Gen Neil Sexton said: "We have worked for many years to ensure that when the Apache AH1 was retired, we would be its custodians. Conserving

and allowing the public to view the airframe and its story will serve as a fitting tribute to a helicopter that played a significant role in the lives of so many men and women who have served in our armed forces, and in British military history."

Mark Broadbent

Escapee's Auster on display in Doncaster

The fuselage section of Auster J1.N G-AHHP has recently been positioned on display at Doncaster's South Yorkshire Aircraft Museum (SYAM). The exhibit's wings are now being restored in the attraction's workshop and will be fitted in due course.

Hotel-Papa was famously stolen from Sywell in Northamptonshire on November 22,

1950 by Brynley Fussell, a 19-year-old Borstal escapee. Despite having no flying experience beyond a 30-minute trial lesson, he successfully flew the Auster all the way to Orléans in France via a series of short 'hops'. The aircraft sustained damage during its landing and Brynley was arrested by French police shortly afterwards.



Auster J1.N G-AHHP pictured at SYAM recently SYAM

Veteran reunited with Stow Maries Tiger Moth



Terry Dann and Flt Lt John Cooper in Tiger Moth T6055
David Davies-Stow Maries

RAF veteran Flt Lt John Cooper celebrated an impressive anniversary at Stow Maries Great War Aerodrome in Essex on April 14.

John, who is now 99, made his first ever RAF flight in Tiger Moth T6055 on April 14,

1944. Exactly 80 years later he was reunited with the aircraft, thanks to pilot Terry Dann who co-owns the biplane and keeps it flying. John then took the opportunity to fly in another historic aircraft – Terry's 1946-built

ex-Army Air Corps Auster.

After completing his training, John went on to become a bomber pilot and later an instructor, amassing some 6,000 flying hours with air cadets before becoming an air traffic controller.

briefings

Supermarine Spitfire Mk.XVIII SM845 has been returned to the UK Register as G-BUOS, having been acquired by Duxford's Aircraft Restoration Company. Previously registered D-FIII by Fliegerhorst GmbH & Co KG of Eschbach, Germany in 2021, the 1945-built machine was damaged on landing at Hildesheim on May 26, 2023 Alan Wilson



Once said to be "a pilot by the grace of god", world renowned Russian test pilot Anatoly Nikolaevich Kvochur died on April 16 at the age of 71, following a long illness. A Hero of the Russian Federation, Kvochur was noted for his fast jet displays during the 1980s, '90s and 2000s in a host of Russian types, including the Sukhoi Su-27 Flanker

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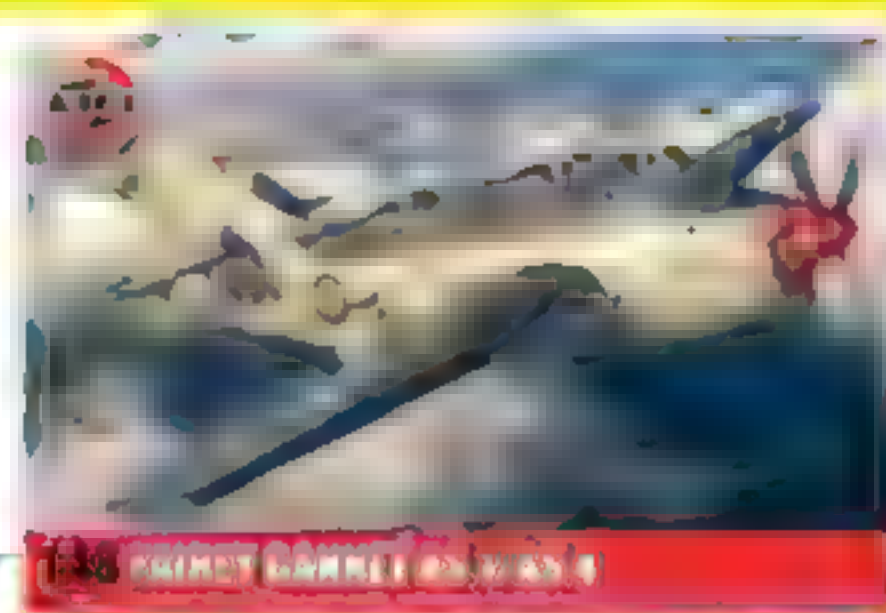
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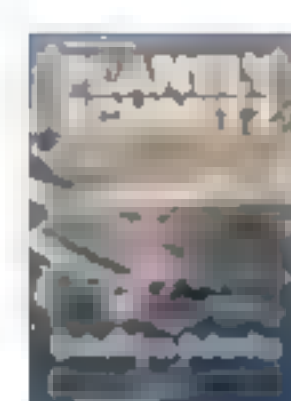
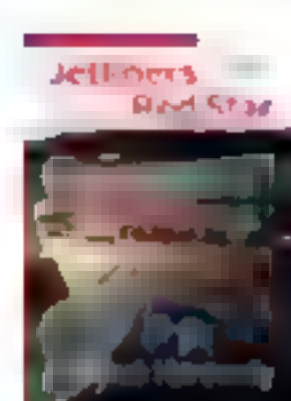
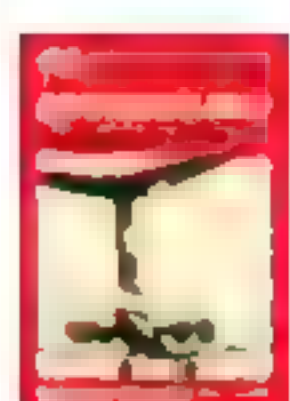


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Liberators attacked close to home

The article *Death In The Dark* by Ian McLachlan (April issue) reminded me of that awful night on April 22, 1944 [when 12 USAAF bombers were shot down by the Luftwaffe as they attempted to return to their bases].

In those days I was an aviation mad youngster living with my parents at Colman Road in Norwich and had already made friends with the 2nd Air Division USAAF – I'd been 'adopted' by a Liberator crew of the 389th BG at Hethel. When my father came home for tea that day in April he did express surprise that the



The B-24s were ambushed by Messerschmitt Me 410 night-fighters. This example is a prototype KEY

Division had taken off so late as it would mean they would return in the dark which they had not done before.

I asked if I could stay up to see their return and so was watching in our garden when

the roar of the B-24s heralded their return.

The three airfields close to Norwich were all lit up and the B-24s had their lights on which was quite a sight. Suddenly we heard a burst of

machine gun fire and all hell was let loose. At one point a B-24 with both starboard engines on fire flew past our house at about 100ft before crashing a few hundred yards away near Newmarket

Road. For many months afterwards that road still had lumps of molten aluminium buried in the tarmac.

Purely by chance, that evening my parents had invited a 2nd Air Division Officer to supper and he was so shaken by what he had seen that he asked my father to drive him to the Attlebridge base. My father, who used his car for war duties, agreed so long as I went with them. When we arrived at the base it was clear to see how shaken his aircrew friends were – it's something I will never forget.

David Hastings MBE
Salhouse, Norwich

South Yorkshire's 'Flying Flea'

Referring to the article *Finningley Gems* (May issue) about the fate of Finningley's historic aircraft collection, while it is correct that Pou-Du-Ciel G-AEKR was lost in a 1970 hangar fire, this was not at the South Yorkshire Aircraft Museum, and did not involve the South Yorkshire Aircraft Society which didn't form until 1973. The

fire occurred at RAF Finningley inside No.2 Hangar where the 'Flying Flea' was used as kindling to start a fire which ultimately damaged and wrote off three Varsity T.1s. The fire was started by a disgruntled service man who saw it as his way to get out of the air force.

Sam Scrimshaw
South Yorkshire
Aircraft Museum

From Seafire to Sea Fury

With great interest I read the article on the Dutch Sea Furys by Tom Spencer (April issue). During my research on the history of HMS *Chaser* I came across the story of a former Dutch Sea Fury pilot, Dirk Theodoor Challik.

Born in December 1920, he joined the Royal Dutch Navy and started flight training in the UK during 1942. After completion he was selected to fly the Seafire. In 1945 he

was stationed with 899 Naval Air Squadron on board *Chaser* bound for the Pacific. After arrival in Sydney he was transferred to 887 Squadron on HMS *Indefatigable*. Sub Lt Challik was involved with the attacks on the Sakishima Gunto islands ahead of the Okinawa landings. During operation Iceberg Two on May 3, 1945, he claimed a Japanese 'kill' flying Seafire Mk.III '131/S'. He survived the war

and stayed with the Dutch Fleet Air Arm serving with 860 Squadron. In 1951 he attended a training course, to transfer to the Sea Fury, at St Merryn in Cornwall. He was tragically killed on October 24, 1955 due to a bomb exploding when it fell off while he was landing Sea Fury FB.60 J-8/6-8 at Valkenburg in the Netherlands.
Jasper Brinksma
Zwolle, The Netherlands



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'Spelunker': try saying that a mile underground



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Flying with the 'Screaming Eagles'

After leaving school in 1943 I had visions of becoming a fighter pilot, so I joined the RAFVR [Royal Air Force Volunteer Reserve]. I passed the aircrew selection board and was accepted for training, but because of my age I was placed on the deferred list, so I decided to join the Air Training Corps.

At the time it was common practice to visit local airfields and try to get a joy ride on a training flight. One day in the summer of

1944, I decided to cycle over to a local airfield at Aldermaston about ten miles from home in Reading. Some of the American 101st Airborne Division [nicknamed 'Screaming Eagles'] glider units were stationed there. On arrival at the main gate, I asked the sentry if there was any chance of some flying. He called the duty officer who escorted me to flying control. I was told they had flight training that day and that I could fly in a

Waco Hadrian glider that was loaded with sandbags (no troops).

So, I sat on the ballast with no seat belts, and I held onto the support webbing behind the pilots. We did several circuits and bumps, towed by a Douglas C-47. I also managed to get a flight in the tug later in the day. I often wonder what happened to the American airmen I met that day and if they survived D-Day.

Phil May
Via e-mail

Credit where it's due

In the otherwise excellent resume of RAF photo reconnaissance (PR) from the start of World War Two, *Alone In The Sky* (April issue), the lack of mention of Sidney Cotton is surprising.

In the book of Cotton's life, *Aviator Extraordinary*, his role in the initiation of PR in the early stages of the war is most likely exaggerated but he did have a role to play and he did make a contribution to the

overall success of PR where previously the RAF had somewhat failed.

Even when discussing Cotton's own aircraft, Lockheed 12A G-AFTL, later in the magazine Cotton does not warrant a mention. I believe that it is important not to rewrite history how we think it should have been. Cotton was, by all accounts, a difficult character but to ignore his input does a disservice to him.

Rod Dean
Via e-mail

Memories of Messerschmitts and Meteors



A Gloster Meteor in distinctive, all-white paint scheme
Both Clifford J Cote

I've been a long-time subscriber and enjoy reading *FlyPast* immensely. Your recent articles on the Messerschmitt Me 262, Meteor and Mosquito sent me once again to my father's picture album.

My father, Clifford J Cote, served in the RCAF during the Second World War. He volunteered for the air force as a 19-year-old tradesman in 1941. He was called up and

did basic and trade training in 1942 here in Canada and was then sent to England in the spring of 1943. There he was taken on by the RCAF's 410 'Cougar' Squadron servicing echelon.

During that time the unit operated the Mosquito NF Mk.XIII and Mosquito NF Mk.XXX night-fighter and intruder aircraft. He was very proud of the RCAF and his time with 410. He

served at different bases in England but was mostly stationed at Hunsdon in Hertfordshire. After D-Day the unit moved to France and he was stationed at Amiens/Glisy, until 410 Squadron moved again to Gilze-Rijen in Holland. He was stationed there until the end of the war

but didn't make it back to Canada until January 1946, where he returned to civilian life.

I believe the pictures I include were taken at Gilze-Rijen in the spring of 1945. From your previous articles and a really close look at the Me 262, I think it might be the one Roly Falk flew back to Farnborough on

May 19, 1945, while stopped at Gilze-Rijen. The one Meteor has the controversial white paint scheme. Was it for camouflage or for recognition? I will leave that up for readers to decide, but I know what my father told me...

Jim Cote
Lindsay, Ontario,
Canada



A captured Messerschmitt Me 262, believed to be at Gilze-Rijen in 1945

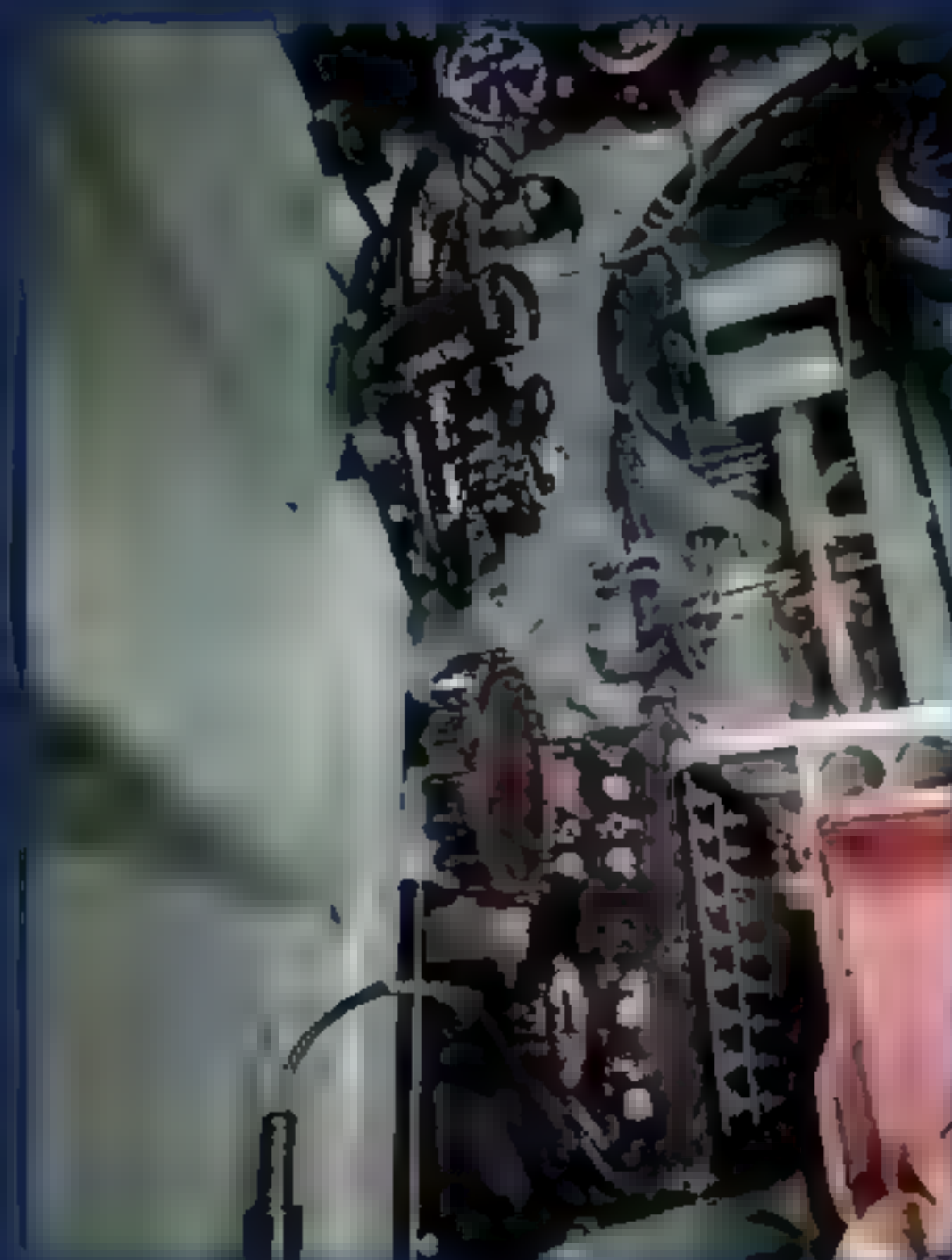


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VICKERS SPITFIRE MK. XIX



SCHNELLBOMBERS

Barry Wheeler explores some of the stories of the Junkers Ju 88s that fell into Allied hands – incredibly, two of them survive today

Below
Emblazoned with KG 51's Edelweiss, 9K+HL (WrkNr 7036) was the first complete example of a Ju 88A-1 to fall into British hands. It is seen here at RAE Farnborough on October 2, 1940 shortly after its arrival

All images via Barry Wheeler unless stated



real pilot's aeroplane and a delight to fly" was how one RAF test pilot described flying the Junkers

Ju 88. Unlike many combat aircraft that were adapted for a multitude of different roles, this famous German twin became the Luftwaffe's apocryphal 'maid of all work' and excelled in all the tasks it was called upon to undertake. Such was its versatility that it remained in production throughout the war.

Opening the account

At the outbreak of war on September 3, 1939, the RAF had little hard evidence of

accurate performance figures for Germany's frontline aircraft. Most of what was known and passed on to RAF pilots via Air Ministry (AM) intelligence bulletins came from copies of the weekly magazines *Aeroplane* and *Flight*. These were supplemented by occasional 'leaks' from neutral sources across Europe.

As well as concerns about the performance and capability of Messerschmitt's new Bf 109E and whether the Hurricane and Spitfire would be capable of holding their own in combat against it, the list of 'urgent information required' about the Luftwaffe's latest operational types was headed by the much-discussed Junkers Ju 88

Schnellbomber. The literal translation for this was 'fast bomber' – it relied on its speed to avoid enemy fighters, rather than defensive armament and armour, and was the first aircraft designed with this concept in mind when it took to the air on December 21, 1936. The concern for Fighter Command was that the twin Ju 88 had demonstrated a performance equal to that of the single-engine Hurricane just six months previously when it set a closed-circuit record of 321.25mph while carrying a payload of 4,400lb over 621 miles.





IN CAPTIVITY



During the Phoney War, Ju 88s were occasionally encountered, so when one was shot down while attacking shipping off the coast of Scotland, the AM sought its urgent recovery from its watery grave.

When Germany launched its offensive against western Europe

on May 10, 1940, the type was in the vanguard of the Luftwaffe's attacks across France and the Low Countries. With enemy aircraft being shot down along the fighting front, the small number of Air Ministry Intelligence staff working on behalf of A.I.2(g) and the German speakers of A.I.1(k) with the British Expeditionary Force was hard put to investigate more than a handful of them due to a constantly changing frontline as the German Army moved swiftly westwards. While some Ju 88 crashes were investigated and various equipment 'fits' and armament details noted, the most useful find was a technical manual on the type. This bulky treasure, which like all written material was forbidden to be flown with, let alone taken into a combat zone, was sent to Britain,

where it proved to be a vital primer for the eventual repair and return to flight of the first intact example found during the Battle of Britain.

More than 20 complete Ju 88s of various types were acquired by the RAF during the war, each selected by the Royal Aircraft Establishment (RAE) for assessment of the various changes Junkers engineers had made to the basic design up to the last versions to enter service.

Part of the booty following Germany's surrender in May 1945 included examples of the last marque built (see panel).

While some were flown to Britain for technical investigation, they undertook very few flights. Of the selected Ju 88s, just two were to survive the scrapping of unwanted aircraft in the post-war years – one is in the RAF Museum Midlands at Cosford in Shropshire, while the other is at the National Museum of the United States Air Force (NMUSAF) at Wright-Patterson Air Force Base in Ohio.

The captured flyers

During the early stages of the Battle of Britain, the RAF acquired its first intact Ju 88A-1 when a crew from 3 Staffel Kampfgeschwader 51 'Edelweiss' (3./KG 51) flying 9K+HL (Werk

Left

Junkers Ju 88 WrkNr 7036 had been reassembled, finished in the RAF's then traditional dark brown and dark green camouflage, and assigned the serial AX919. It is seen here between evaluation sorties at Farnborough around April 1941

Below

Landing intact at Lulsgate Bottom on July 23, 1941, Ju 88 4D+DL presented the RAF with its first look at the lengthened wing used by the A-5 variant. Later becoming EE205, the RAE released this image of the aeroplane in RAF markings in June 1942. The aircraft was scrapped at Sleaf in Shropshire during 1948





Above
Built as an A-1 with the wings of an A-5, HMS09 boasted the electrical system of an A-6. Assessed by the RAE in late 1941, this anti-shiping reconnaissance-bomber, was later assigned to No. 1426 (Enemy Aircraft) Flight by the end of the year. It was damaged beyond economical repair at RAF Thorney Island in May 1944, stripped of useful equipment and scrapped. Note its original Luftwaffe code (M2+MK) is visible

Nummer [WrkNr] 7036) lost their bearings during a night attack on Crewe. Short of fuel, they force-landed at Buckholt Farm, Bexhill, Sussex, during the early hours of July 28, 1940. The crew – pilot OFw Josef Bier, observer Lt Willi Ruckdeschel, radio operator Uffz Heinz Ohls and flight engineer Uffz Martin Multhammer – were captured unhurt.

Dismantled and transferred to the RAE's Farnborough facility in Hampshire, the relatively undamaged aircraft was allocated the RAF serial AX919. After close examination, which included the starboard Jumo 211B-1 engine being removed and assessed by Rolls-Royce, it was repaired and flown briefly through April and June 1941. Assigned to No. 1426 (Enemy Aircraft) Flight at RAF Duxford in Cambridgeshire, it was later

used as a spares source to keep another example airworthy.

It was nearly a year before a second flyable example arrived on English soil. This time it was a Ju 88A-5 (WrkNr 3457).

Assigned to I./KG 30 and coded 4D+DL, it landed by mistake at RAF Lulsgate Bottom (sometimes referred to as Broadfield Down) near Bristol on the night of July 23-24, 1941. Tasked with hitting the docks at Birkenhead near Liverpool, on the return flight to France the crew were deceived into thinking that they had successfully crossed the English Channel by British 'Meacon' radio countermeasure (RCM) bearings when they had actually simply crossed the Bristol Channel. This system received radio beacon signals

from navigation aids and rebroadcasted them on the same frequency to confuse navigation. Allocated the RAF serial EE205, it was delivered to the RAE a week later. Undertaking extensive trials with the Air Fighting Development Unit, it also joined No. 1426 (Enemy Aircraft) Flight at Duxford. It was later transferred to the Central Fighter Establishment's Enemy Aircraft Flight (CAF EAF) at Tangmere in Sussex, then to No. 47 Maintenance Unit for storage in November 1945, before being scrapped in 1948.

Another success for the British 'Meacon' RCM operation forced a Ju 88A-6 M2+MK to land at RAF Chivenor on the north coast of Devon on November 26, 1941, following an anti-shiping patrol over the Irish Sea. On strength with Küstenfliegergruppe



Above right
Acquired by British Intelligence through defection on May 9, 1943, Ju 88R-1 WrkNr 360043 (PJ876, ex-D5+EV) was considered as one of the most important 'war prizes' of World War Two

Right
'Baksheesh': Junkers Ju 88D-1/Trop WrkNr 430650 survives today in its original Rumanian Air Force livery with the National Museum of the USAF at Wright-Patterson Air Force Base in Ohio
United States Air Force Ken LaRock



106 (the literal translation of Küstenfliegergruppe being coastal flying group) based out of Morlaix in the northwest of France; the crew were captured. Becoming HM509, the aircraft, WrkNr 6073, was inspected before being transferred to No. 1426 (Enemy Aircraft) Flight's 'circus' on December 11. Touring round the UK and flying recognition and demonstration flights for Allied units, it remained with them until July 26, 1944, after which it was grounded and struck off charge.

A key defection

On May 9, 1943, a Ju 88R-1 (WrkNr 360043) night-fighter of Nachtjagdgeschwader 3's IV Gruppe defected in a secret pre-arranged agreement with the British Secret Intelligence Service, better known as MI6.

Operating from Kristiansand in the extreme south of Norway, the crew – pilot Oblt Heinrich Schmitt, radio operator Oberfw Paul Rosenberger and flight engineer Erich Kantwill – flying D5+EV, had been ordered to hunt and destroy a civilian de Havilland Mosquito between the UK and Sweden, but reported engine failure. Diving low level to deceive German radar, they jettisoned three life rafts, before



Left
Boasting its original IV./NJG.3 markings and nose mounted Matratze (mattress) antennas used by the type's FuG 202 Lichtenstein BC airborne radar, Ju 88R-1 WrkNr 360043 survives today as part of the RAF Museum's collection at RAF Cosford in Shropshire Oren Rozen

flying towards the Scottish coast, where a pair of Spitfires from 165 Squadron escorted them to RAF Dyce near Aberdeen. Despite being hit by the airfield's anti-aircraft guns, the Ju 88 landed safely.

The aircraft was the first captured example powered by BMW 801 engines, but its most significant revelation was the FuG 202 Lichtenstein BC airborne radar it was operating. RAE technicians established its operational capability in trials with a Handley Page Halifax. This led to the development by Bomber Command of a new deception device in the form of aluminium strips, dubbed

Window, to counter the enemy radar. Dropped from the bombers, these strips (about 1-2cm wide by 25cm long) would effectively obscure the bomber stream's return and prevent radar crews from identifying individual aircraft. As a result, it was considered one of the most important coups gained by Britain in saving bomber crews over Germany.

Assigned the RAF serial PJ876, the aircraft undertook 83 flights with the RAE, primarily on radio and radar trials from Farnborough and nearby Hartford Bridge (now Blackbushe Airport). On May 6, 1944, it was flown to RAF Collyweston in Cambridgeshire, where it joined No.1426 (Enemy Aircraft) Flight. Demonstrated to various Allied units during the build-up to D-Day, it later joined the CAF AEF, before being withdrawn and stored post-war. Later refurbished for display in the Battle of Britain Hall at the RAF Museum in Hendon in the late 1970s, it has since been relocated to Cosford.

A postscript to the story of this unique aircraft appeared in the German magazine *Bild am Sonntag* in 1974, where it was revealed that the pilot, 29-year-old Heinrich Schmitt, had been working as an MI6 agent from 1940 and had passed information from his father, who was also a spy and secretary to the Reich Minister of Foreign Affairs, Gustav Stresemann.

Left
Seen here wearing prominent US 'stars and bars' while 'Stateside', Junkers Ju 88D-1/Trop WrkNr 430650 was presented to the Allies by a defecting crew from the Rumanian Air Force's 2nd Long Range Reconnaissance Squadron on July 22, 1943

“Royal Aircraft Establishment technicians soon discovered its operational capability during trials with a Handley Page Halifax”



Right

This view of Ju 88G-1 WrkNr 712273 TP190 reveals the numerous antennas and aerials associated with the type's array of night-fighting radars and warning receivers. Falling into Allied hands on July 13, 1944 this 'windfall' was eagerly welcomed and provided another step forward in new countermeasures for Bomber Command's strategic campaign against Hitler's cities and industry

**Below**

Junkers Ju 88S-1 WrkNr 140604 was discovered by the British at Villacoublay in September 1944. Seen here wearing a late war *Mäandertarnung* camouflage, it was coded RF+MT in RAF service. Trials revealed the 'S' was one of the fastest variants of the type with a top speed of 402mph at 29,800ft recorded

Following the defection flight, Schmitt's wife and father received a pre-arranged message via the British-run propaganda radio station transmitting to the Luftwaffe, "*Hier ist eine sonderbotschaft fur Siegfried*" ("Here is a special message for Siegfried"), with a quote from German playwright Friedrich Schiller that confirmed his successful arrival in Britain. Later, both Schmitt and Rosenberger broadcast to Germany over British radio.

Romanian rendezvous

Far from Britain, Ju 88D-1/Trop WkrNr 430650 was a

newly built example of the type being operated by the Romanian Air Force's 2nd Long Range Reconnaissance Squadron when, on July 22, 1943, Sgt Theodore Nikolai defected with it to the Allies. Departing Mariupol in the south of Ukraine, he flew this tropicalised variant of the Ju 88 to Limassol in Cyprus. In August, it was allocated the serial HK959 and flown to Heliopolis, just outside Cairo, where it was overhauled by the British Airways Repair Unit Servicing Flight, gained RAF markings and was given the name *Baksheesh*, a middle

eastern word meaning a small gift or donation. By this time, the RAF had three airworthy Ju 88s and *Baksheesh* was handed over to the United States Army Air Force (USAAF). Given prominent 'star and bars' markings and fitted with external fuel tanks, the aircraft was ferried to the US that October. Heading across Africa for Nigeria, it crossed the South Atlantic to Brazil via Ascension Island, before crossing the Caribbean to Florida. Finally arriving at Wright Field in Ohio for evaluation, the aircraft was assigned the USAAF serial FE-1598. Flown under foreign evaluation for some 36 hours, it was withdrawn in 1944, before being placed in storage at Davis-Monthan Air Force Base in Arizona. Selected for retention and display, it was delivered to what is now the NMUSAF on January 6, 1960, where it is displayed in the collection's World War II Gallery in its original Romanian colours.

A coup beyond words

On July 13, 1944, the RAF had another coup in the hard-fought night war over





The chosen ones

At the end of the war, British Air Intelligence teams visited German airfields in search of the latest Luftwaffe aircraft and singled out the following Ju 88s for likely transfer and assessment in the UK:

AM 1 – Ju 88G-6 (WrkNr 622983) 4R+RB of NJG 2
AM 2 – Ju 88G-6 (WrkNr 620560) 4R+CB of NJG 2
AM 3 – Ju 88G-6 (WrkNr 622838) (VK884) 3C+AN of II./NJG 4
AM 9 – Ju 88G-6 (WrkNr 621965) (VL991) 4R+DR of III./NJG 2
AM 14 – Ju 88G-6 (WrkNr 620788) C9+AA of NJG 5
AM 16 – Ju 88G-6 (WrkNr 622311) 3C+DA of NJG 4
AM 31 – Ju 88G-6 (WrkNr 623193) C9+HB of NJG 5
AM 32 – Ju 88G-6 (WrkNr 623960) ?+VH
AM 33 – Ju 88G-6 (WrkNr 622186)
AM 41 – Ju 88G-6 (WrkNr 622054) 7J+OV of NJG 102
AM 47 – Ju 88G-6 (WrkNr 620968)
AM 48 – Ju 88G-6 (WrkNr 622811) 3C+MN of II./NJG 4
AM 75 – Ju 88H-1/Fw 190A Mistel S 3B combination of IV./KG 200
AM 76 – Ju 88H-1/Fw 190A Mistel S 3B combination of IV./KG 200
AM 77 – Ju 88A (WrkNr 2492)/Fw 190A Mistel S 3A combination of IV./KG 200
AM 112 – Ju 88A-6/U (WrkNr 0660) (VN874) 1H+MN of II./KG 26

The last of these – AM 112 – was a specialist anti-shipping strike aircraft that had been surrendered at Lübeck in Northern Germany. Considered to have some merit, it was ferried first to Farnborough, before being transferred to Gosport to join the Air Torpedo Development Unit as VN874 for dropping trials. Details of these remain obscure, but it had been scrapped by the end of 1947.

Germany when Junkers Ju 88G-1 4R+UR (WrkNr 712273) landed in error at Woodbridge in Suffolk. Stepping out of the ventral hatch, thinking they had landed at an airfield near Berlin, Uffz Hans Maeckleand, Obergefrs Heinze Olze and Hans Mockle were greeted by armed RAF personnel, taken to the guardhouse and interned as prisoners of war. On inspection, the aircraft carried some of the secrets that were resulting in serious losses to Bomber Command, including the latest radars and systems that were giving the Luftwaffe a huge advantage. As well as the latest Telefunken FuG 220 Lichtenstein SN-2 intercept radar, the aircraft carried the Siemens FuG 227 Plensburg which homed in on the 'Monica' tail-warning radar (officially known as ARI 5664) introduced by the RAF in June 1942, and the FuG 350 'Naxos', also developed by Telefunken, which locked on to the British H2S airborne ground scanning radar system. It was a priceless prize.

Assigned the serial TP190 and handed over to the RAE at Farnborough, its pilots flew

more than 32 hours of trials, during which vital information was passed to Bomber Command. This resulted in the RAF changing its tactics to avoid unnecessary use of the two radar systems, saving the lives of countless bomber crew. Having given up all its secrets, TP190 appeared at the German Aircraft Exhibition at Farnborough in October 1945. For what it had contributed towards the survival of Allied bomber crews, a suitable preservation order would have been appropriate, but it was deemed only eligible for scrap soon after.



Following the D-Day landings on June 6, 1944, Allied troops arrived at Villacoublay, about eight miles southwest of Paris, that September. There, they found Ju 88S-1 (WrkNr 140604). Coded RF+MT, this late production example was air tested and flown across the Channel to RAF Hawkinge near Folkstone in Kent, before being transferred to No. 1426 (Enemy Aircraft) Flight at Collyweston that September. Allotted the serial TS472, it remained flyable until it was broken-up post-war following a period of storage with No. 47 Maintenance Unit at RAF Sealand in north Wales.

Following the defection by a German night-fighter crew to Ireland as the war in Europe entered its final days, Ju 88G-6c WkrNr 621642, was ferried to the UK by Capt Eric 'Winkle' Brown in early June 1945. Assigned the RAF serial VK888, the aircraft was flown to Tangmere the following month. However, given the type was no longer crucial to RAF needs it was scrapped a short time later.

Ju 88G-6 (WrkNr 622838) was the latest variant in German use when it was sourced by Air Intelligence teams in 1945. Last used by II./NJG 4, it was given the RAF serial VK884 and the Air Ministry code 'AM 3'. However, apart from its ferry flight to the UK, its assessment was brief. Appearing at the Exhibition of Enemy Aircraft in London's Hyde Park during September 1945, it was later disassembled and sent for scrap. ●

Left
Seen here while on show at the Exhibition of Enemy Aircraft in London's Hyde Park during September 1945, Ju 88G-6 WrkNr 622838 was one of the last variants used by the Luftwaffe's night-fighter force. Note the aircraft boasts a rounded nose housing a centimetric radar

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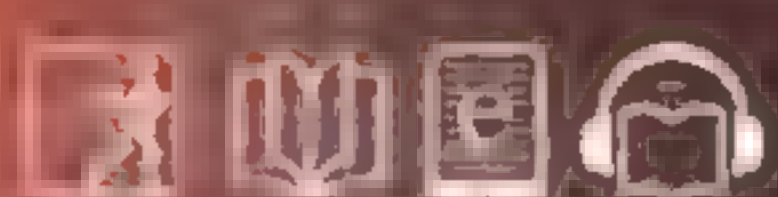


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FROM BOMBERS TO BUSINESS

A churchyard visit helps **Ken Ellis** reflect on the exploits of a Leicestershire bomber station that's now a thriving business estate



Above
Hendon's famous
Lancaster
R5868 served at
Bottesford from
September to
November 1943
RAF Museum



Repurpose, recycle, regenerate – what do you do with a former bomber base? A return to agriculture leaves an awful lot of concrete and structures to remove or find a use for. No wonder that many such sites faced a slow decline, becoming increasingly derelict.

The latter seemed to be Bottesford's destiny, but it was not to be. Today it is a thriving, high-tech industrial estate reusing many of the wartime buildings. The watch tower has been transformed from an empty shell to plush accommodation.

To highlight the airfield heritage, alongside the tower Avro Lancaster outlines have been cut into the grass – take a careful look at a well-known website's all-seeing satellite imagery. Within the busy development there is even an office block erected in 2005 in the style of a control tower.

All of this is carefully guarded by a security kiosk and lifting barriers: the former RAF Bottesford is a *private*, hard-working commercial centre. A good overall view of the area is to be had from Beacon Hill, just to the north of Bottesford village. A pair of hangars sit either

side of the Normanton to Long Bennington road, serving haulage firms.

Our coverage generally involves readers getting up-close to Britain's airfield heritage. So far, this feature seems to only offer glimpses... but Bottesford still has a powerful story to discover.

First 'ops'

Located on the extreme northern tip of Leicestershire, Bottesford's eastern perimeter overflows into Lincolnshire. Six miles northwest of Grantham, the airfield has Normanton village on its southern edge. In surrounding Derbyshire, Lincolnshire,



Left
Survey shot of
Bottesford in May
1950 when the
airfield was used
for bomb storage
DoE

Nottinghamshire, and Rutland are *other* Normantons, which probably explains why Bottesford – two miles further south – was chosen as the station's name.

Opened on September 10, 1941, there was a rush to get the base ready for war. The station's Operations Record Book (ORB) records that buildings and particularly the runways required considerable remedial work, blighting flying into 1943.

The first of a daily procession of lorries arrived from the 93 Maintenance Unit's bomb store at Norton Disney, near Newark, on October 21. During that month Bottesford took on its inaugural and most loyal unit, 1524 Beam Approach Training Flight: its Oxfords stayed until January 1944.

An advanced party of 207 Squadron personnel came by road from Waddington on November 15, 1941 with its Avro Manchester Is touching down the following day. A pair carried out Bottesford's debut raid – to Lorient, France – on the 23rd. From the problematic Manchester came Roy Chadwick's masterpiece, the Lancaster. These began to appear in March 1942 and 207 got busy converting crews to the new type. The inaugural 'op' with 'Lancs' was to Rostock, Germany, on April 24.

Arrested runways

Bottesford's runways and taxi tracks were regularly being repaired or upgraded, providing

many headaches for 207's commanding officer. This was compounded by a working party setting up runway arrester gear during the early summer of 1942. Intended to cut down write-offs due to landing overshoots, a bulky drum system was set into the ground close to the end of each runway. Stretched across the runway was 400ft of steel hawser to engage a hook retrofitted to Handley Page Halifaxes and Lancasters (the Short Stirling was deemed unsuitable).

Twenty bomber airfields were chosen for the installation, each requiring six units, one for each end of the classic three-runway layout. The installation programme went relatively smoothly, but the weight penalties and out-of-service time to fit arrester hooks to Halifaxes and Lancasters doomed the

project; it was abandoned in July 1943.

Writing in his diary for June 15, 1942, Australian 'Lanc' pilot Flt Sgt George Hawes of 207 Squadron was not impressed with the innovation. "There was no flying at all today, they were putting arrester gear at the end of each runway. I am wondering if this great added expense [£21,000 per station] is really worthwhile and what is going to happen to all this equipment after the war is finally over. I'm tipping it will just be left to rot, like thousands of pounds of other material." Entombed in concrete, Bottesford's unused arrester gear was still extant into at least the 1990s.

Those words were among the last in George's diary. He was at the controls of R5632 of July 23, 1942 on a raid to Duisburg, Germany. The Lancaster crashed into the North Sea; all seven on board were killed. Another 207 crew also failed to return that night.

The runways were declared unserviceable on August 23, 1942, and 207 was deployed to Syerston and the Conversion Flight to Swinderby while more comprehensive rectification work was undertaken. The decision was taken to leave Bottesford completely on September 20 that year and within 24 hours the unit had decamped to Langar.

Stirlings of 90 Squadron began to arrive on November 1,

Below
The watch tower
in the late 1980s;
it has since been
fully restored
All KEC unless noted



Right
Flooded runway
arrester gear at
Bottesford, 1992



1942, biding time until Ridgewell was ready to accept them in late December. The unit ORB for December 1 recorded more construction work troubles. An Air Transport Auxiliary pilot delivering Stirling I BK644: "...taxied on to the perimeter track whereupon a civilian driving a [steam] roller lost his wits, jumped from the moving vehicle which then collided with the tailplane..." The Stirling eventually returned to service.

W4798, W4825 and W4826, carried out the first operation on the night of January 2/3, 1943. This was a 'Gardening' – mine-laying – sortie to the Elderberry and Furze areas in the Bay of Biscay.

In September 1943 an experienced warhorse with 68 'ops' to its credit, arrived to join 467's 'B' Flight, having previously served with 83 Squadron from Wyton in Cambridgeshire. Built by Metropolitan-Vickers in June

1942, Lancaster I R5868 was painted with the Australian unit's identity letters 'PO' and the individual code 'S' which in the phonetics of the day meant it was known as *S-for-Sugar*. This illustrious machine was destined to achieve the second highest number of operational sorties for a Bomber Command aircraft and today graces the RAF Museum at Hendon.

Captained by Plt Off A M Finch, *Sugar's* first Bottesford 'op' was to Hanover on September 27/28, 1943. During its time at the Leicestershire base, R5868 flew another two trips to Hanover, plus others to Bochum, Munich, Kassel, Frankfurt, Stuttgart and Dusseldorf. *Sugar's* tenth and final raid from Bottesford – its 78th in total – was to Modane, on France's Italian border, on November 10/11, 1943 with Plt Off A Fisher at the controls.

With the safe return from Modane, 467's personnel prepared to relocate to Waddington. As the unit's ORB

Famous warhorse

Sixteen days after it was formed at Scampton, 467 Squadron RAAF flew across to Bottesford on November 24, 1942 to settle in and begin working up. A month later, 19 'Lancs' were on charge. Four Mk.Is, W4384,

"S-for-Sugar was destined to achieve the second highest number of operational sorties for a Bomber Command aircraft"

Right
Maintenance on
a 207 Squadron
Lancaster at
Bottesford, June
1942





for November 11 describes, this was a far from straightforward process. "We had to wait to see whether ops were on or off. Word came through that ops were on and great fun was had by all, many had to send over to Waddington to bring back equipment needed... Then at 1400hrs the detail was cancelled [and] the move was on again, however owing to the late hour move most of the main party was put off to the 12th. ...aircrews did fly their aircraft up leaving all the others frantically packing ready for the morrow." Sugar was one of the 'Lancs' that got away on the 11th.

As Fg Off L W Baker brought R5868 safely back to Waddington from an aborted raid on Flensburg, on April 23, 1945, the venerable Lancaster had achieved a grand total of 137 operations. (Sources differ on this figure.) This amazing feat was only beaten by Elsham Wolds, Lincolnshire-based Mk.III ED888 of 103 Squadron with 140 'ops'.

Headstone tribute

Cross the footbridge over the river Devon and enter the churchyard of St Mary the Virgin's at Bottesford. While in this tranquil setting, pause to reflect on the headstones that convey the varied fates of the

airmen lying there.

Within the plot for the Allcroft family, who hailed from Belvoir, a couple of miles to the south, is the headstone of 18-year-old George. On October 1, 1918 he joined the nascent RAF as a cadet. Just 40 days later he was dead, one of 228,000 or so victims of the Spanish Flu pandemic in Britain.

Among the cluster of World War Two Commonwealth War Graves, Flt Lt Robert Porter of 207 Squadron is buried – he died on July 5, 1942 after a bout of pneumonia.



Left
Flt Sgt George Hawes (right) with members of his 207 Squadron crew at Bottesford, spring 1942



Left
RAF graves in St Mary the Virgin's, Bottesford
Ken Ellis



In the early hours of August 6, 1942, Manchester I L7835 landed at Bottesford only to encounter Lancaster I R5550 which had entered the runway in error. Both belonged to 207 and were involved in pilot conversion training. The bombers collided and were burnt out; two died on L7835, three on R5550. The Lancaster's flight engineer, Sgt Harold Curson (aged 23, spelt as Carson in some sources), was laid to rest at St Mary's.

Once again, the poor state of Bottesford's runways played a part in the tragedy. The accident report for L7385 states: "Runways being used at the time to taxi aircraft to take-off point due to unserviceable" ➡

Left
Flt Sgt Des Sullivan RAAF with 467 Squadron air and groundcrew in front of Lancaster III ED764 'Nuts To The Nazis' at Bottesford, circa June 1943

Right
Maj Hugh Nevis
in the cockpit
of 436th TCG
C-47 'War Weary'
at Bottesford,
early 1944. The
dejected-looking
Donald Duck
noseart is 'towing'
a pair of CG-4
gliders

nature of airfield. Although 'Reds' were flashed by Aldis [lamp] to landing aircraft he [the Manchester] confused them with GPI [glide path indicator] and continued his approach...Tighter and better aerodrome control recommended."

Fourteen days later, just after midnight, Lancaster I R5863 of 207's Conversion Flight was practicing a three-engined overshoot when it crashed close to Normanton; all six on board perished. Pilot Flt Sgt William Fordwych (21) and flight engineer John Murphy RAAF (27) were buried at Bottesford.

As previously noted, increasingly unserviceable runways forced 207 Squadron to move to Langar in September 1942. Captained by Flt Lt Raymond Hannan DFC (given as Hannah in some sources) Lancaster I R5694 lifted off at 1500hrs from Langar, bound for Bad Zwischenahn, west of Bremen, on November 25, 1942. Its flight profile after that is unknown, but three hours ten minutes later it impacted at Easton, south of Grantham, 12 miles as the crow flies from its base.

All eight of the crew were killed: Hannan (25), flight engineer Sgt Peter Thompson (21), navigator Flt Sgt J K B Lee (29), and wireless operator/air gunners Sgt Albert Roberts (21) and Sgt Brian Jenkin RNZAF (24) all lie in peace at St Mary's. The choice of graveyard perhaps reflects 207's association with the church. Lee's headstone carries the date of the 26th,



possibly indicating he was extracted from the wreckage but died shortly afterwards.

Within St Mary's is a plaque commemorating 207 – the unit these days flies Lockheed Martin F-35Bs from Marham. Dedicated on September 17, 1995, it records the 122 who perished while serving from the base, 41 of whom have no known grave.

Return to peace

With the departure of the Australians of 467 Squadron in November 1943, the airfield was prepared for hand over to the USAAF's Ninth Air Force. Between January and April 1944, the 436th and 440th Troop Carrier Groups, with C-47 Skytrain transports and CG-4 Hadrian assault gliders, prepared for D-Day prior to deploying to Membury and Exeter, respectively.

Lancasters returned to the circuit in July 1944 as 1668 Heavy Conversion Unit reformed. In September, 1321 Bomber Defence Training Flight was established, its Hurricanes 'bouncing' the 'Lancs' to keep their gunners sharp. This was short lived as 1321 disbanded in November; 1668 transferred to Cottesmore (then Leicestershire) in September 1945.

Until 1948 Bottesford was a relief landing ground for the Harvards of nearby flying schools. From late 1945 the bulk of the concrete was used as a munition storage sub-site by a succession of maintenance units, finally being cleared in late 1959. Land began to be sold off from 1954 and Bottesford started its regeneration from bomber base to commercial hub. ●

Below
Hangar on the
western side of
the Normanton
to Long
Bennington Road
Ken Ellis





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LAST OF THE WORLD WAR TWO **VCS**

At the time of writing former RAF Coastal Command pilot John Cruickshank is approaching his 104th birthday. **FlyPast** presents a tribute to the last living recipient to have been awarded the VC during World War Two

Right
John Alexander
Cruickshank VC
(born May 20,
1920). His July
1944 VC action
took place in the
Norwegian Sea,
west of Narvik
Key Collection



undertook countless long patrols over vast stretches of ocean, often without seeing any sign of life, much less action. It seems likely that the RAF's last surviving Victoria Cross recipient, John Alexander 'Jock' Cruickshank and his crew must have also experienced this scenario.

Background

John Cruickshank was born in Aberdeen, Scotland on May 20, 1920, and was educated at the local grammar school before joining the Commercial Bank of Scotland as an apprentice in 1938.

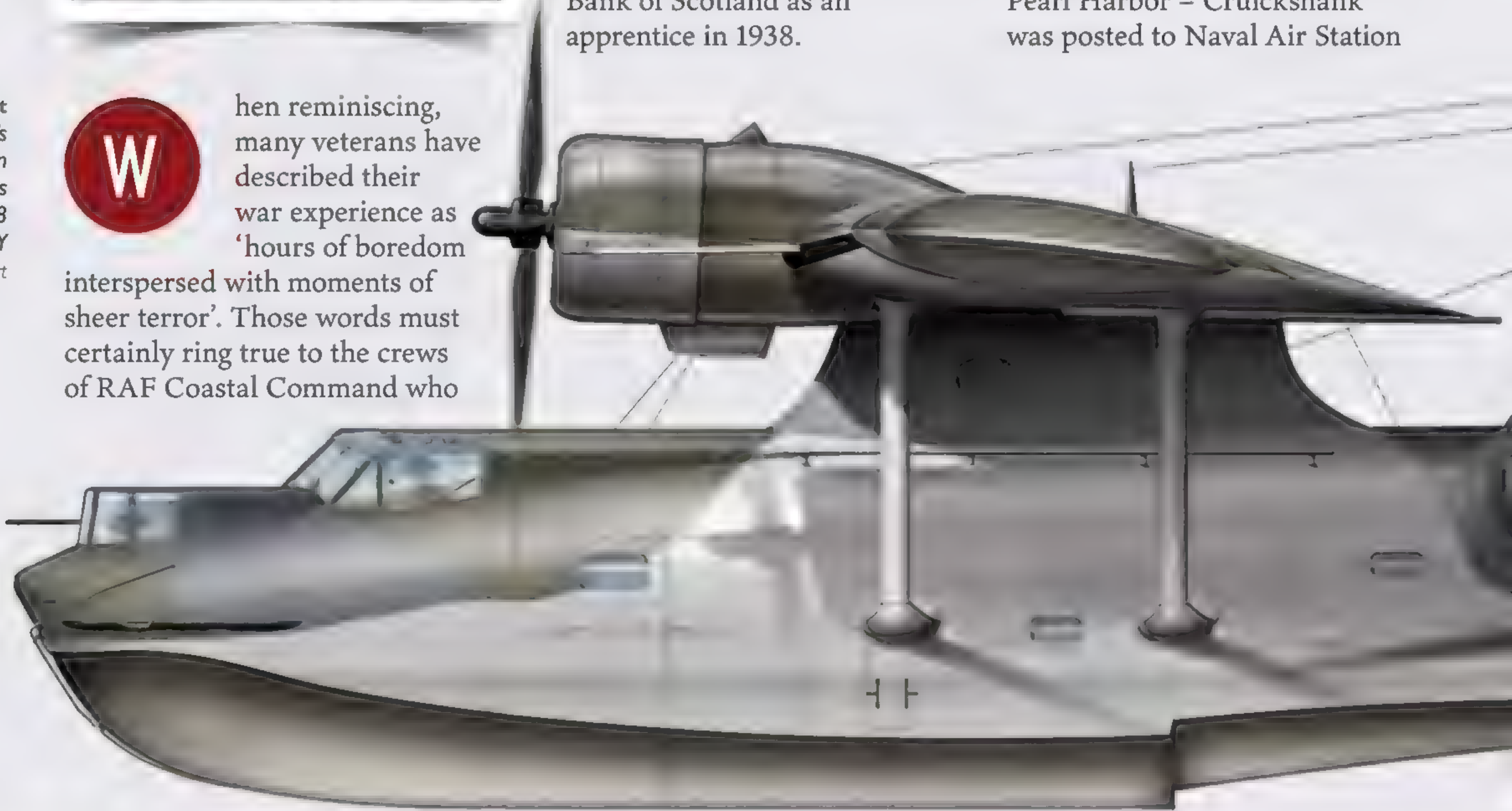
With conflict seemingly imminent, Cruickshank decided to volunteer for the Territorial Army a few days prior to his 19th birthday and when war was declared he was 'called up' for service in the Royal Artillery. He continued with the unit until early 1941 when he applied for a transfer to the RAF for pilot training.

Basic training began in July of that year and on September 15 he was sent to Canada for elementary flight training.

On December 10, 1941 – just three days after the attack on Pearl Harbor – Cruickshank was posted to Naval Air Station

Right
John Cruickshank's
120 Squadron
PBY Catalina was
registered JV928
and coded DA-Y
Andy Hay/ Flyingart

When reminiscing, many veterans have described their war experience as 'hours of boredom interspersed with moments of sheer terror'. Those words must certainly ring true to the crews of RAF Coastal Command who





Left
 Operated privately during the 1980s and '90s, G-BLSC flew in the colours of Cruickshank's Catalina. Note the lack of waist blisters or nose turret on this civilised airframe. The 'Super Catalina' also boasted more powerful engines, a larger tail and even an air-stair to help gain access to the rear fuselage.
 KEY = Duncan Cubitt

(NAS) Pensacola, Florida for advanced pilot instruction. By July 1942 he was finally qualified, had been awarded his 'wings' and commissioned as a Pilot Officer within the RAF Volunteer Reserves (RAFVR).

On his return to Britain, Cruickshank was posted to 4 (Coastal) OTU at Invergordon, Scotland for operational training on the Consolidated PBY Catalina and on January 10, 1943, he was promoted to Flying Officer.

Cruickshank was posted to his first operational unit, 120 Squadron, on March 25 and immediately began flying anti-submarine missions from its base at Sullom Voe in the Shetland Islands. By the summer of 1944 he had completed more than 40 operational sorties as part

of Coastal Command's battle to keep the North Atlantic and Arctic Sea lanes open for supply convoys – although, in common with most of his compatriots, he had seen little in the way of action.

VC action

On July 17 Cruickshank prepared Catalina JV928, coded DA-Y, for what would be his 48th mission. Joining him in the 'Cat' that day was Flt Sgt Jack Garnett (second pilot), F/O J C Dickson (navigator), Flt Sgt S B Harbison (flight engineer), two wireless operators: W/O W C Jenkins and Flt Sgt H Gershenson, and two gunners (Sgts J Appleton and R S C Proctor).

Also aboard was a qualified rigger (Flt Sgt A I Cregan) and

Sgt S I Fidler, the 'third pilot' looking to gain experience.

Taking off at 1345hrs, the crew began a 14-hour patrol hunting German U-boats. They failed to see a single vessel until 2045hrs when, in the Norwegian Sea, West of Narvik, the on-board radar picked up a contact 43 miles away. From a height of 2,000ft, Cruickshank soon saw a submarine cruising on the surface. It made no attempt to hide, so he ordered his crew to fire an identification flare. In return the Catalina received a barrage of flak. They had located a U-boat, thought to be Type VIIC, U-361. The vessel had launched on September 9,



Right
Former Flt Lt
John Cruickshank
VC (left) is seen
with AM Sir
John Lapsley
(1916-1995,
right), retiring
Commander-
in-Chief of RAF
Coastal Command,
during closing
ceremonies at St
Mawgan, Cornwall,
on November
27, 1969. The
command became
No 18 (Maritime)
Group of Strike
Command in the
final stage of
RAF restructuring.
Cruickshank had
flown in from
South Africa,
where he was a
bank manager
at that time,
to attend the
ceremony
George W Hales/
Fox Photos/Hulton
Archive/Getty Images

1942, and had already conducted three patrols and been a member of six wolfpacks – although she had not sunk or damaged any Allied ships.

Immediately Cruickshank pulled the big, lumbering patrol bomber into an attack profile and descended to 50ft. Passing a range of 1,000yds the nose turret and blister gunners began firing their .303in guns. As the Catalina roared over the vessel, Cruickshank ordered depth charges to be released – but the weapons failed to drop.

The U-boat had all but stopped, but flak reappeared as soon as Cruickshank resumed his attack. Seconds later the Germans scored a direct hit and a shell exploded within the bomber's fuselage. Dickson was killed instantly, Harbison was wounded in both legs and Appleton suffered head injuries.



“Dickson was killed instantly, Harbison was wounded in both legs and Appleton suffered head injuries”

Right
John Cruickshank
with Duxford
Canso Catalina
'Miss Pick Up'
in 2013
Sqn Ldr Dylan Eklund
via David Legg



Cruickshank received wounds to his legs and his chest but continued with the bombing run. Reaching 50ft, he tried again to loosen the weapons and this time all six depth charges released in a perfect straddle across the U-361. Pulling up into sea fog, the crew never saw the submarine again – it was later revealed to have sunk rapidly, along with its crew of 52 men.

Limping home

Cruickshank's new priority was to get the stricken JV928 back to base. Analysis showed the hull to be riddled with shrapnel holes and flak had ripped a 1ft gash along the waterline. The radar was also unserviceable, and the fuel tanks were leaking at an alarming rate. The latter was of particular concern as Sullom Voe was still several hundreds of miles away. The crew got to work plugging holes with rags, canvas engine covers and even their 'Mae West' life jackets while, up front, Garnett took over flying to allow Cruickshank to have his wounds tended.

It was during this treatment that the 'skipper' passed out. It was some time before he came

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“Cruickshank refused morphine for fear that it would prevent him from thinking straight and he faded in and out of consciousness”

Above
John Cruickshank
VC flying in 'Miss
Pick Up' during
2013
Sqn Ldr Dylan Eklund
via David Legg

Right
Gp Cpt Bob Kemp
(Retd) presents
John Cruickshank
VC with his
long overdue Air
Efficiency Award
in 2024
Bob Kemp

round, but he immediately tried to make his way back to the flight deck – only Appleton’s restraining actions prevented Cruickshank from aggravating his injuries through excessive exertion. Despite his condition, Cruickshank refused morphine for fear that it would prevent him from thinking straight, and he faded in and out of consciousness throughout the flight back to base.

Five and half hours later, the Catalina arrived overhead Sullom Voe and Cruickshank insisted on resuming command of the aircraft. Despite immense pain and difficulty breathing, he ordered that they orbit until first light for the best chance of a safe landing. Catalina JV928 circled the Shetlands for the next hour as its crew jettisoned guns, armour, and anything else they could to reduce the weight of the damaged airframe in readiness for landing. As the sun was rising, Garnett and Cruickshank eased the flying boat down – at which point it immediately began to fill with

water through the myriad holes in the hull. The flight crew gunned the throttles and ‘flew’ the Catalina straight up onto the sand at high speed, beaching it close to the waiting medical teams. Cruickshank needed an immediate blood transfusion before being taken to the base hospital – where he was found to have 72 individual wounds.

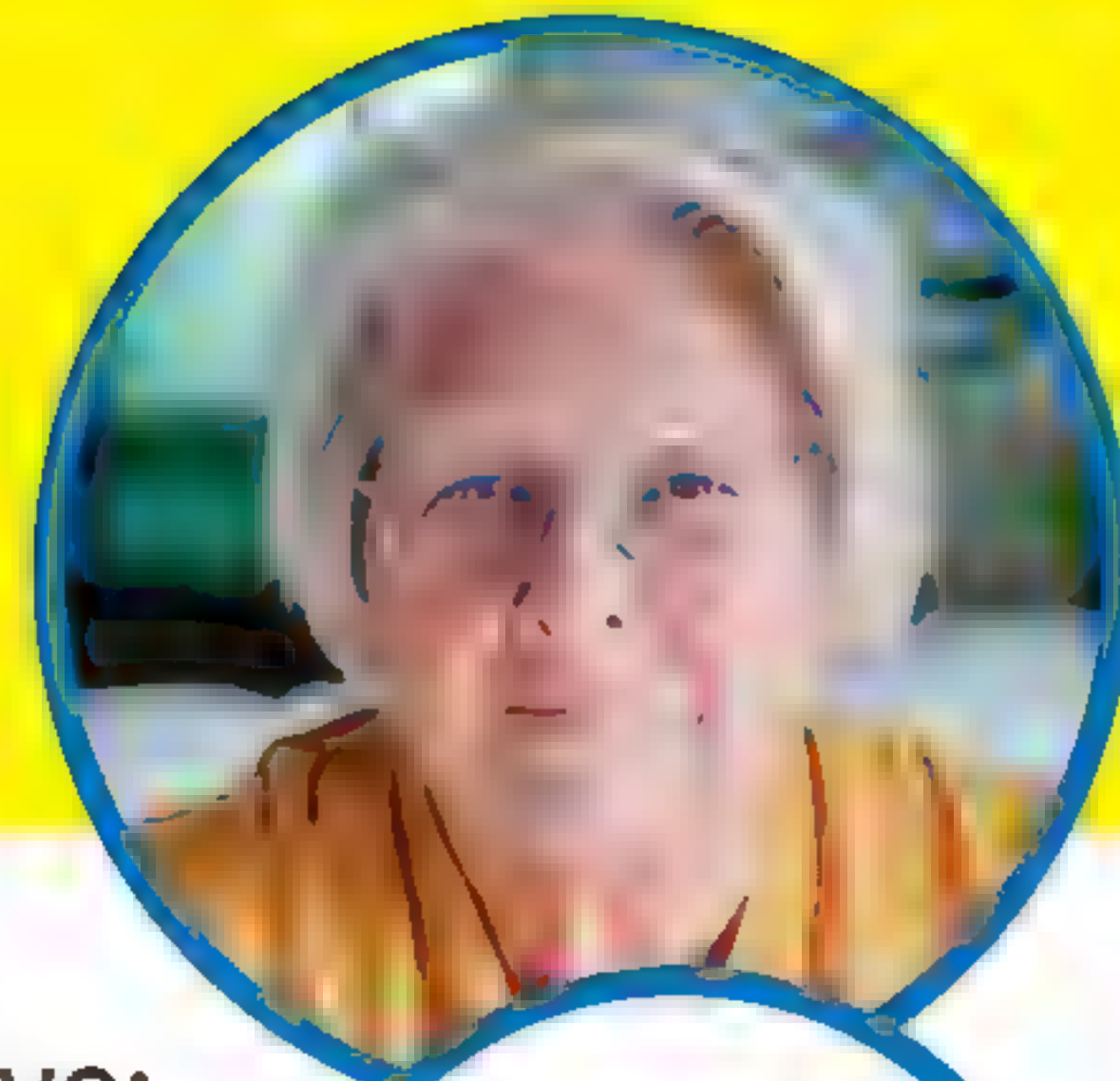
For his bravery Cruickshank was awarded the VC on September 1, 1944, and Jack Garnett was presented with the DFM at a joint investiture at Holyrood House, Edinburgh. Cruickshank’s award was one of just four VCs awarded to Coastal Command crew during the war; the others were posthumous.

Cruickshank never returned to operational flying and eventually left the RAF in 1946 to continue his career in banking and international finance. He retired in 1977 and went on to become the first recipient of the Victoria Cross to reach the age of 100. Remarkably, in March 2024, his mightily impressive medal rack was boosted still further by the award of the Air Efficiency Award (AEA). The AEA, instituted in 1942, was awarded, uniquely, to Reservists serving in the RAF on completion of ten years’ service, with service on flying duties with the RAF during World War Two counting as treble time. Research revealed Cruickshank had qualified to receive the AEA 70 years ago, giving Gp Capt (Retd) Bob Kemp of the Royal Auxiliary Air Force Foundation the honour of presenting Cruickshank’s AEA during a private visit.

As this edition went to press, John Cruickshank was on the eve of his 104th birthday and all at FlyPast salute him. 🇬🇧



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Canadian 'Cats'

Right
Wg Cdr Larry Skey was Officer Command 422 Squadron when it was formed at Lough Erne in Northern Ireland on April 2, 1942. It was the RCAF's 19th – fifth coastal – squadron formed overseas
All images Department of National Defence-RCAF unless stated



Below
One of three Lerwick prototypes built by Saunders-Roe, L7250 – seen here during trials at East Cowes on the Isle of Wight in 1940 – was one of seven examples lent to 422 Squadron from the Invergordon-based No. 4 (Coastal) Operational Training Unit in April 1942. It was later scrapped
KEY Collection



fter 24 of the 41 ships in the Russia-bound convoy PQ 17 bound for the White Sea port of Archangel were sunk between June 2 and July 19, 1942, Arctic convoys from Britain were suspended. When they restarted with PQ 18, among the measures taken to protect convoys from the brooding threat of the German battleship *Tirpitz* and other Kriegsmarine surface vessels was

Andrew Thomas recounts the activities of 422 Squadron RCAF during operations in support of 1942's Operation Orator, the defence of Arctic convoy PQ 18

Operation Orator, which included moving RAF assets to the north of Russia.

The strike force of 32 Handley Page Hampden TB-1 torpedo bombers was supported by nine long-range photo reconnaissance Supermarine Spitfires, while the wider ranging search element comprised nine Consolidated Catalina Is and Ibs. The Catalinas were detached from 210 Squadron, based at Sullom Voe in the Scottish Shetlands, to Lake Lakhta near Archangel. From there they were to monitor the waters around the north of Altafjord in Norway for any movement by *Tirpitz*, then acting as a 'fleet in being', and to provide close escort and anti-submarine cover for PQ 18 as it approached its objective.

A Commonwealth effort

Based at Castle Archdale on Lough Erne in Northern Ireland under Wg Cdr Larry Skey was 422 Squadron Royal Canadian Air Force (RCAF), formed in

April that year. A temporary shortage of Catalinas resulted in the squadron conducting its work using obsolescent Saunders-Roe Lerwick Mk.I flying boats.

With the squadron taking delivery of its first three Catalinas in early August, its first task was not long in arriving. This would mark 422's first venture into northern waters. On August 16, Wg Cdr Skey and Fg Off Oscar Barnett ferried Catalina Ibs FP105/DG-B and FP106/DG-C some 500 miles north to the Faroe Islands to assist in the calibration of the recently installed radio direction finding (RDF) equipment. The crews also surveyed the suitability of Vágur, the most westerly of the Faroes' large islands, as a flying boat base, before returning to Invergordon in Scotland on August 18.

On August 27, the three Catalinas and their crews under Sqn Ldr Roger Hunter were dispatched to the North Sea inlet



at Sullom Voe in the Shetlands to participate in Operation Orator. Their main task was to transport men and equipment required for new wireless installations and priority Hawker Hurricane spares, as well as conducting anti-submarine patrols en route. Like most units, the aircrews came from across the Commonwealth, comprising 14 Canadians, 12 Britons, 2 New Zealanders and a South African.

After a short delay due to bad weather, 422 Squadron's first sortie to Russia launched at 1520hrs on August 30: FP106/DG-C, flown by WO Len Limpert, left Sullom Voe carrying key personnel to Lake Lakhta. They made landfall at Cape Kanin and alighted safely at 0840hrs the following day. Less than an hour after their departure, FP103/DG-A, flown by Sqn Ldr Roger Hunter with Plt Off Keith Patience as co-pilot, left Sullom Voe for Grasnaya on the Kola Inlet near Murmansk, carrying personnel and further Hurricane spares. Having flown close to Norway's Lofoten Islands, they passed the North Cape – the northernmost point of Europe – heading east into the Barents Sea, before eventually entering the Kola Inlet. Firing the colours of the day, Hunter alighted near a Soviet destroyer that guided the



“Taking delivery of its first three Catalinas in early August, its first mission with them was not long in coming”

aircraft down the river to Grasnaya. The flight had taken 15hrs 50min. In fair weather with good visibility, both sorties had been uneventful.

During the late afternoon of September 1, FP105/DG-B, captained by Fg Off Jack Bellis with Plt Off Dave Patton as co-pilot, departed Sullom Voe for Lake Lahkta carrying further men and equipment for the wireless station. Approaching the White Sea, they encountered a violent weather front, forcing the crew to ‘coast crawl’ around the seaboard to Archangel, where they finally alighted at 1320hrs on September 2. They had been airborne for 21½ hours.

Broken and beached

PQ 18 comprised 40 merchant ships under heavy escort, including HMS Avenger, the first carrier to accompany an Arctic convoy. It departed Loch Ewe on Scotland's northwest coast for its long and dangerous voyage to Russia on September 2. The following afternoon, WO



Limpert's crew flew FP106/DG-C from Lahkta to Grasnaya to commence operations protecting the convoy. Hunter's crew later undertook a patrol over the White Sea, where they encountered a blinding snowstorm before arriving back at Lake Lakhta. While there, due to a lack of ablutions the crew braved the freezing waters to take a bath to avoid the communal Russian bathhouse open to men, women, and children! During the late morning of September 5, Fg Off Bellis's crew in FP105/DG-B flew forward to Grasnaya, followed later by South African Lt Nick Honey and his crew in FP103/DG-A. Both encountered severe

Top

A rare view of a RAF Catalina Ib (Z2145/DA-B of 210 Squadron) moored at Lake Lakhta in Russia, circa July 1942. A Soviet Naval Aviation base, a Soviet produced Chyetverikov ARK-3 multi-role flying boat can be seen in the background
R C Nesbit

Above

Seen here atop a Lerwick at Lough Erne on August 28, 1942, Fg Off Jack Bellis (left) and his co-pilot Plt Off Dave Patton went on to fly four of 422 Squadron's Arctic sorties
Department of National Defence-RCAF



Right
Crew salvage
what they can
from FP103/DG-A
following its crash
on September 8,
1942
Shetland Museum
via D Legg

snowstorms, but were able to refuel before returning to Sullom Voe.

At 1600hrs on the September 7, Bellis's crew was the first to leave on the return leg. Although the trip was uneventful, the weather over Shetland was so poor that they were forced to divert to Invergordon, alighting just before midday on September 8. Following them from Grasnaya 15 minutes later, WO Limpert's crew had been joined by the British Vice Consul General to Moscow. Encountering persistent poor weather almost immediately, they arrived at Sullom Voe around 0730hrs on September 8.

Finally, at 1900hrs on September 7, Lt Honey with Plt Off Patience as co-pilot, Plt Off John Knox as navigator, flight engineer Sgt Bill McEwan and wireless operators/air gunners Plt Offs 'Admiral' Beattie, Joe Corkindale and Ralph Shepherd lifted FP103/DG-A from Grasnaya and turned for Shetland. On board they also carried Lt Ryan of the Royal Navy as a passenger. After a long flight south in poor weather, including countless bone shaking rain squalls north of the Shetlands, the crew sighted a Junkers Ju 88 northwest of Sullom Voe around midday on September 8. Fortunately, it continued on course and the Catalina crew proceeded unhindered.



“The following day there was a report that *Tirpitz* had left its anchorage”

Right
'Kiwi' Plt Off Keith
Patience, seen
here while learning
to fly with No. 3
Elementary Flying
Training School in
New Zealand in
May 1941, went
on to become a
veteran of 422's
Russian missions
Air Force Museum of
New Zealand

Disaster struck an hour later. To get above the weather, Honey climbed the 'Cat' to 7,000ft. Suddenly, it fell from the skies uncontrollably, with flight engineer Bill McEwan seeing the ailerons tear away from the wings. Keith Patience later recalled: “We left Grasnaya at 1900hrs with Nick Honey as skipper, en route for Sullom Voe in the Shetlands, but on approaching we were diverted to Invergordon because of poor weather. The weather was really bad, with cloud base almost down to sea level. Suddenly, the aircraft began to undulate violently and appeared to shoot upward and, after what appeared to be ages, it suddenly seemed to fall downwards and hit the sea. Everything which was loose in the aircraft was floating about – slings of ammunition floated through the aircraft like piano keyboards. We hit the sea belly first and water entered the bilge. Ralph Shepherd was on the radio. Through the windows it could be seen that the ailerons on both wings had broken away. Water poured through the bilge and, with engines roaring, we skimmed the water towards land and eventually ran up on some rocks a few yards offshore.

“Apart from getting wet,



everyone survived. We had crashed off the isle of Whalsey [situated east of the Shetland mainland], on which there was a small RAF RDF Station. One of the crew fired bursts from one of the blister guns to attract attention and, having got ashore, we were sheltered and given hot drinks in the RDF Station hut before being taken to Sullom Voe through very rough seas by an RAF air-sea rescue boat. However, the Catalina was damaged beyond repair.”

Return to Russia

As PQ 18 was battling its way through the Arctic Ocean, the

Right
Seen posing on top
of FP103/DG-A
at Lake Lakhta
on September 4,
1942, WO Len
Limpert flew eight
Arctic sorties –
including a search
for the 'Tirpitz'
during which his
crew encountered
a Luftwaffe flying
boat over the
Barents Sea
Department of
National Defence-
RCAF





ships of QP 14 sailed from Russia on the return voyage to Britain on September 13. The following day, there was a report that Tirpitz had left its anchorage, but after a worrying period of uncertainty the battleship was found anchored in an adjacent fjord, the presence of Allied air assets through Operation Orator having exercised a deterrent. During the late afternoon of September 15, FP106/DG-C, flown by WO Limpert, left Sullom Voe once more for Grasnaya, where it arrived the following morning to continue operations. It was also carrying

the returning British Vice Consul General to Russia. Late the following morning, Len Limpert eased FP106 off from Grasnaya and flew a crossover patrol (where the two convoys would cross the escort changeover) some 35 miles off the North Cape, searching for the Tirpitz and other German capital ships known to be based in northern Norway. While doing so, the crew sighted a twin-engine push-pull Dornier Do 18 flying boat. Following it for ten minutes, it soon made off. On their return, they made landfall at Kildin Island around 0530hrs the following morning,

before alighting at Grasnaya half-an-hour later. The following evening, the 27 surviving ships of PQ 18 reached Dvina Bar. Two days later, Limpert's crew ferried stores from Grasnaya to Lahkta. With severe icing and storm force winds, they flew the near five-hour flight at low level. Returning to Grasnaya the next afternoon, they arrived during an air raid. Landing on the water, the aircraft was surrounded by falling bombs, but fortunately escaped damage.

On September 24, with convoy QP 14 safely approaching British waters, Sqn Ldr Roger Hunter returned to Sullom Voe with Catalina Ib FP106/DG-C. On board was Rear Admiral Geoffrey Miles, head of the British Military Mission to the Soviet Union, and his aide Lt Cdr Palmer. As was usual, the flight was flown in the face of poor weather, with low visibility and gale force winds. When they alighted, they brought 422 Squadron's operations in northern Russia to an end. During 15 sorties, the squadron had flown 180 hours, which later resulted in the award of its first battle honour, Arctic 1942 – the only RCAF squadron to be given this accolade. 

Left
Another view of FP103/DG-A beached on the isle of Whalsey in Shetland on September 8, 1942. Note the starboard aileron is missing – flight engineer Bill McEwan recalled seeing them being torn away from the wings Shetland Museum via D Legg

Below
Plt Off Keith Patience's logbook pages showing the sorties he flew into the Arctic in support of Operation Orator H K Patience

YEAR: 1942		AIRCRAFT		PILOT, OR 1ST PILOT	2ND PILOT, POC, OR PASSENGER	DUTY (INCLUDING RESULTS AND REMARKS)	FLIGHT LOG									
DATE		Type	No.				DAY	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME
JULY						422 SQUADRON, LOUGH ERNE	26-40	20-45			68-45	68-50	82-20	3-05	2-10	1-50
"	21	CATALINA	YAT91	FLY BAKER	NORMAL CREW	LOUGH ERNE TO MT. BATTEN						3-00				
"	22	"	AT159	NOT FILLING	NORMAL CREW	OPERATIONAL - ANTI-SHIPING ATTRA						3-20			9-00	7-00
"	25	"	AT159	NO SMALLMAN	NORMAL CREW	OPERATIONAL: CV. A/S. PATROL						11-20			7-50	7-50
"	27	SUNDERLAND	W4019	FLY YEOMAN	SELF	GIBRALTAR TO MOUNT BATTEN							1-35		8-10	8-10
"	31	"	T9113	PO HOSBAND	SELF	DETACHED TO PRAY BURN						1-10	2-25			
AUGUST	4	"	DV962	PO SGT PILLING	SELF	LOW-LEVEL BOMBING PRACTICE						1-10	1-35			
"	5	"	DV962	PO SGT PILLING	SELF	TESTING AIRCRAFT. (P.D.)							2-00			
"	6	"	DV962	PO SGT PILLING	SELF	LOOP-SWINGING (P.D.)						2-20	1-55			
"	22	CATALINA	FP105	PO BUTLER	PO SUTTON	LOCAL CIRCUITS - LOUGH ERNE						2-10				
"	23	"	FP105	PO BUTLER	PO SUTTON	LOCAL CIRCUITS						3-00				
"	27	"	FP105	PO BELUS	PO MORRISON	LOUGH ERNE - INVESTIGATION						2-35				
"	29	"	FP105	PO BELUS	NORMAL CREW	INVESTIGATION - SULLOM VOE						2-45				
"	30	"	FP103	PO HUNTER	NORMAL CREW	OPERATIONAL - SPECIAL TAP						8-40			7-00	
SEPTEMBER	1	"	FP103	PO HUNTER	NORMAL CREW	OPERATIONAL - Grasnaya to S.V.						4-10				
"	4	"	FP103	PO HUNTER	NORMAL CREW	OPERATIONAL - Lough Erne						1-25				
"	5	"	FP103	LT. HONEY	NORMAL CREW	OPERATIONAL - Lough Erne						4-00				
"	7	"	FP103	LT. HONEY	NORMAL CREW	OPERATIONAL - Grasnaya to S.V.						9-00			9-00	
"	18	"	"	LT. HONEY	NORMAL CREW	SULLOM VOE LOCAL FLYING						1-20				
GRAND TOTAL (26-40) 228							26-40	20-45			69-25	25-35	91-50	3-05	3-10	42-50
TOTALS CARRIED FORWARD																

The Cat is Back

433915

G-PBYA

The Catalina Society's **David Legg** reveals the winter work required to prepare Britain's only airworthy PBY for the airshow season



None of the RAF Catalinas mentioned in the other articles within this edition had post-war careers, but many surplus aircraft from other Allied air arms went on to serve with smaller air forces

or to have commercial lives. However, now there are fewer than a dozen examples worldwide that are flying, with another handful 'resting' or in the process of being made airworthy.

Having just passed 'her' 80th birthday in 2023, Europe's only

flying Catalina is G-PBYA *Miss Pick Up*, based at the Imperial War Museum airfield at Duxford, Cambridgeshire. She is owned by Catalina Aircraft Ltd and operated on its behalf by Plane Sailing Air Displays Ltd. As is fitting for a venerable old lady,

Right
'Miss Pick Up'
emerged from
its Duxford
hangar for the
first time this
year on April 11
David Whitworth





she has spent the winter months inside her warm hangar being looked after by volunteer crew, the 'Cat Pack', managed by chief engineer Garry Short and aircraft mechanic Chris Hodson.

The 2023 airshow season ended for the Catalina in October with Duxford's appropriately named Flying Finale display on the 14th. One more pilot training flight took place on October 27, exactly 80 years to the day since the aircraft was taken on strength by the Royal Canadian Air Force in 1943. Shareholder/pilot Steve Turley renewed his Catalina Type Rating under instruction from chief pilot Paul Warren Wilson before *Miss Pick Up* was prepared for her hibernation period.

Winter maintenance started with the taking of oil samples for analysis and an oil change prior to the last flight of the season. The change of oil ensures that clean lubricant is spread around the engines at the correct temperature to dispel any moisture in the system. With the last flight over, the Catalina was carefully moved into the hangar,

floats partially down to allow door clearance!

This winter, attention was focused on routine maintenance, necessary repairs and some project work. After a thorough wash and clean, maintenance centred on the annual inspection, hours-based checks, and annual NDT (non-destructive testing), as well as an annual avionics inspection. Some repairs were necessary, mainly to the bow area of the hull. Some stringers below the pilots' seats in the region of the nosewheel doors needed replacement, and new aluminium alloy panels were installed above the nosewheel doors, in particular on the port side of the hull.

Some damage had been caused to the port float and wingtip in France while operating on water toward the end of the 2022 season. Although a new port drag panel or 'sail' was installed that winter, the floats were not used at all during 2023, while awaiting permanent repairs to the operating mechanism. This work, involving repairs to the microswitch's slider mechanism,

has now been carried out and 2024 will see *Miss Pick Up* back on the water, again.

Acquiring replacement tyres is a perennial problem with Catalinas and work has been needed to modify a spare nosewheel leg to accommodate a different profile, ribbed tyre when needed in the future. On the project front, the fuel contents system was upgraded allowing very accurate readings to be obtained from newly installed sensors.

Recognition

Every year, the contribution made by our volunteers is recognised by the award of the John Watts Trophy to the individual who has provided the most significant input. John Watts was co-owner of Plane Sailing's first Catalina and, in addition to flying it on a regular basis, he was also a well-known and respected display pilot on other types, including Lindsey Walton's F4U-7 Corsair and Spitfires during the filming of the 1988 TV series *A Piece of Cake*. John lost his life in an RAF Tornado collision in that same ➤

Above
Having just passed her 80th birthday in 2023, Europe's only flying Catalina is G-PBYA 'Miss Pick Up', based at IWM Duxford, Cambridgeshire. Darren Harbo.

year and the trophy is presented annually in his memory. This winter, the trophy was presented to long-term volunteer and one of the aircraft's crew chiefs, Alan Bilby.

After the winter sojourn, *Miss Pick Up* emerged from the hangar on April 11. In line with the usual plan, after general checks and engine runs, she made her first 'shakedown' flight on April 29. As no serious snags arose, she went on to complete her initial air display booking at Duxford's 'VE Day' Flying Day on May 5.

It was the first of a number of shows at the Catalina's home base this year and *Miss Pick Up* is already booked for displays at RAF Cosford, Blackpool and Old Warden as well as events on the Continent at La Ferté-Alais, Roissy Meaux and Cambrai in France, Gelnhausen in Germany, Hradec Králové in the Czech Republic and Sligo in Ireland.

This list is expected to grow as the season progresses.

One of the advantages of the Catalina is that she has 'long legs', so travelling to distant countries does not present a problem. In the past she has flown to displays in Iceland, Arctic Norway, Russia, Spain and central Turkey, so it can essentially fly wherever airshow organisers want it, provided they can pay for the fuel as part of the fee!

A key feature that makes the Catalina unusual in the air display industry is its mode of operation. She is owned by a group of shareholders, some of whom are pilots, who help finance the continued airworthiness of this wonderful flying boat. Having a team of like-minded owners enables individuals to get involved, not only with flying, but also with tasks such as running our ground training and flight planning. Non-pilots are welcome too and can get



Right
The Catalina's first flight of this year took place on April 29. The crew comprised captain David Barlow, co-pilot Phill Petitt and crew chief/engineer Chris Hodson
David Whitworth



Below
The first engine runs of 2024
David Whitworth



involved in ground maintenance if they wish while also having the opportunity to fly as passengers and/or crew members.

Pilot training

Since 2018, Plane Sailing Air Displays Ltd has held a UK CAA Approval for the training of pilots for the PBY-5A Type Rating (Land and Sea) and operates as a Type Rating Training Organisation with its own Type Rating Instructors (TRIs) and Type Rating Examiners (TREs). The Type Rating is internationally recognised and valid worldwide, which gives the operation flexibility when flying overseas. So, pilots are trained 'in-house' in accordance with a training plan agreed by the CAA. Training for the Land Rating concludes with a short series of display practise flights so that even new co-pilots are exposed to some display flying prior to flying at an actual airshow. Before flying a show for real, pilots need another approval – a Display Authorisation. Co-pilots can progress to captaincy after they have built up hours on type and demonstrated their



suitability to command a large twin-engined 'warbird' and a co-pilot under their supervision.

By the start of the 2024 season, several training flights had already taken place so that both captains and co-pilots are re-acquainted with the Catalina and, as necessary, have their Type Ratings and Display Authorisations renewed or, in the case of new pilots, issued for the first time.

Sea ratings

The PBY-5A (Sea) Type Rating is a coveted qualification and comes only after a pilot has built up hours flying from land. Then, a period of familiarisation training follows, covering engine starts from a mooring; displaced taxiing into, across and down wind; step taxiing; take-offs, circuits, approaches and lining up into wind; touchdowns with power on; go-around procedures; simulated engine failures after take-off; take-offs and alighting on glassy water; 'sailing' with engines off; taxiing to a mooring; exit and entry to water via a slipway; action in the event of engine failure while taxiing on water; step alighting with power; and

seaplane characteristics including porpoising.

It is undoubtedly a comprehensive programme, but on conclusion, there is once again a test with one of Plane Sailing's TREs, which if successful, results in the issue of the Sea Type Rating. Operating the Catalina on water is a vastly different proposition to land, with additional meteorological and water handling considerations. For example, the Catalina has no water rudder, so taxiing becomes a much more complicated

operation than on land.

The main training base for water ops is at Biscarrosse, south of Bordeaux in France, and this will likely be visited again in September for further training and to familiarise some of the newer pilots with the 'black art' of flying boat handling on water. The lake at Biscarrosse, a pre-war base for Air France and a wartime home to Luftwaffe flying boats, is large and has some infrastructure there by way of mooring buoys and waterborne tenders from the excellent local Museum Hydraviation, whose staff are always very helpful to us when Miss Pick Up visits.

An innovation introduced during the winter was for pilots to start training earlier than usual while the Catalina was still undergoing maintenance in the hangar. A party of them travelled to Utrecht in Holland to use the DC-3 simulator at the European Pilot Selection & Training centre. The pilots concentrated on crew resource management/multi-crew ops, engine shutdowns, engine care during normal ops and display flying. All this enabled the group to work together in ways not normally possible when in the air and to feed off each other's experiences during a really useful two-day stay.

By the time these words are read, the 2024 airshow season will be well under way and we look forward to another successful season of display flying. 🟡

Left

The aircraft was built as a Canso A amphibian, the Canadian version of a US PBY-5A, at the Canadian Vickers factory at Cartierville, Quebec, in 1943. Originally carrying the RCAF serial number 11005, it is now painted to represent a UK-based USAAF example of 1945
Darren Harbar

Catalina Open Day – Duxford – Sunday, October 6

Would you like to spend a few hours getting to know how you can become closely involved with the operation of a famous, historical, airworthy aircraft? If the idea of being a part-owner of the Catalina and having the chance to get airborne with her appeals, then get in touch. The operator, Plane Sailing Air Displays Ltd, is planning a 'future shareholder' event for interested individuals – to learn more about the Catalina and 'her' operation; to take a good look at the aircraft; to see her in flight; and perhaps to take up one of the few available shares. Share ownership gives the opportunity to fly (for qualified pilots), or fly in (for enthusiasts), the Catalina. This event will take place at Duxford on Sunday October 6. The cost is £195, and this includes entrance to Duxford Airfield, lunch, and refreshments (this charge will be refunded in full if you subsequently join as a shareholder.) The plan is to fly the aircraft during the afternoon so that she can be seen in the air.

The Catalina Society supports Miss Pick Up www.catalina.org.uk

FlyPast

Plane Sailing's wonderful PBY-5A Catalina 'Miss Pick Up' powers through a valley while operating from Loch Ness in the Scottish Highlands on October 16, 2020

By Andrew Jones





- 1

Starboard tailplane
- 2

Tailplane leading edge de-icing
- 3

Tail navigation light
- 4

Starboard fabric-covered elevator
- 5

Elevator tab
- 6

Rudder trim tab
- 7

Fabric-covered rudder construction
- 8

Tailcone
- 9

Elevator push-pull control rod
- 10

Rudder control horn
- 11

Tail mooring point
- 12

Lower fin structure integral with tail fuselage
- 13

Tailplane centre section attachment
- 14

Upper fin construction
- 15

Aerial cables
- 16

Fin leading edge de-icing
- 17

Port tailplane
- 18

Cooling air intake
- 19

Rear fuselage frame and stringer construction
- 20

Ventral tunnel gun hatch
- 21

0.3in (7.62mm) machine gun
- 22

Fuselage skin plating
- 23

Target-towing reel
- 24

Flare launch tube
- 25

Rear fuselage bulkhead
- 26

Bulkhead door
- 27

0.5in (12.7-mm) beam machine gun
- 28

Starboard beam gun cupola
- 29

Cupola opening side window
- 30

Flexible gun mounting
- 31

Port beam gun cupola
- 32

Gunner's folding seat
- 33

Semi-circular gun platform
- 34

Walkway
- 35

Hull bottom V-frames
- 36

Wardroom bulkhead
- 37

Crew rest bunks
- 38

Wardroom
- 39

Starboard mainwheel
- 40

Hull planing bottom step
- 41

Planing bottom construction
- 42

Fuselage skin plating
- 43

Mainwheel housing
- 44

Hydraulic retraction jack
- 45

Telescopic leg strut
- 46

Fore and aft wing support struts
- 47

Wing mounting centre pylon construction
- 48

Pylon tail fairing
- 49

Starboard wing integral fuel tank, capacity 875 US gal (3,312 lit)
- 50

Fuel jettison pipe
- 51

1,000lb (454kg) bomb
- 52

Smoke generator tank
- 53

Trailing edge ribs
- 54

Fabric covered trailing edge
- 55

Rear spar
- 56

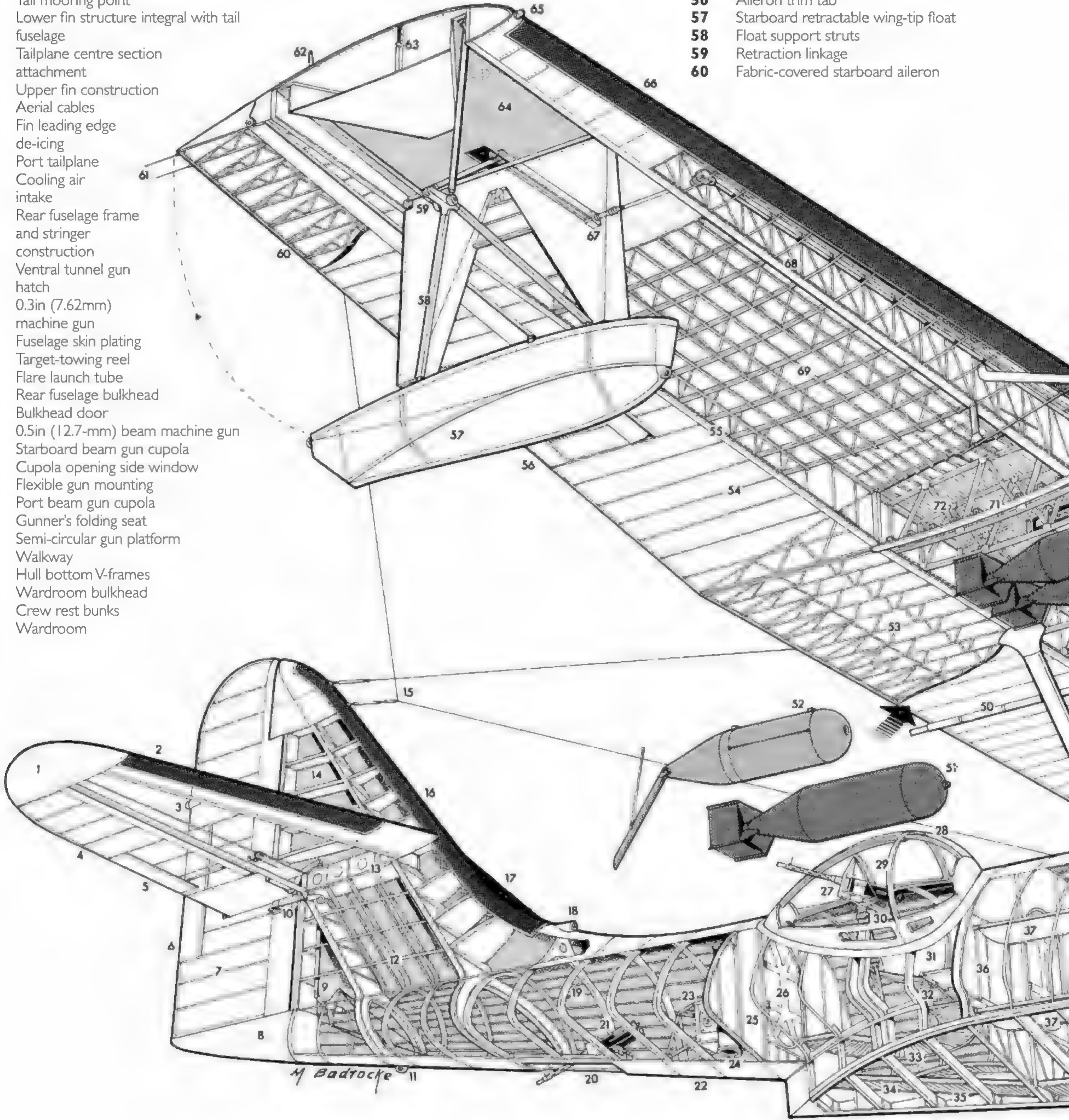
Aileron trim tab
- 57

Starboard retractable wing-tip float
- 58

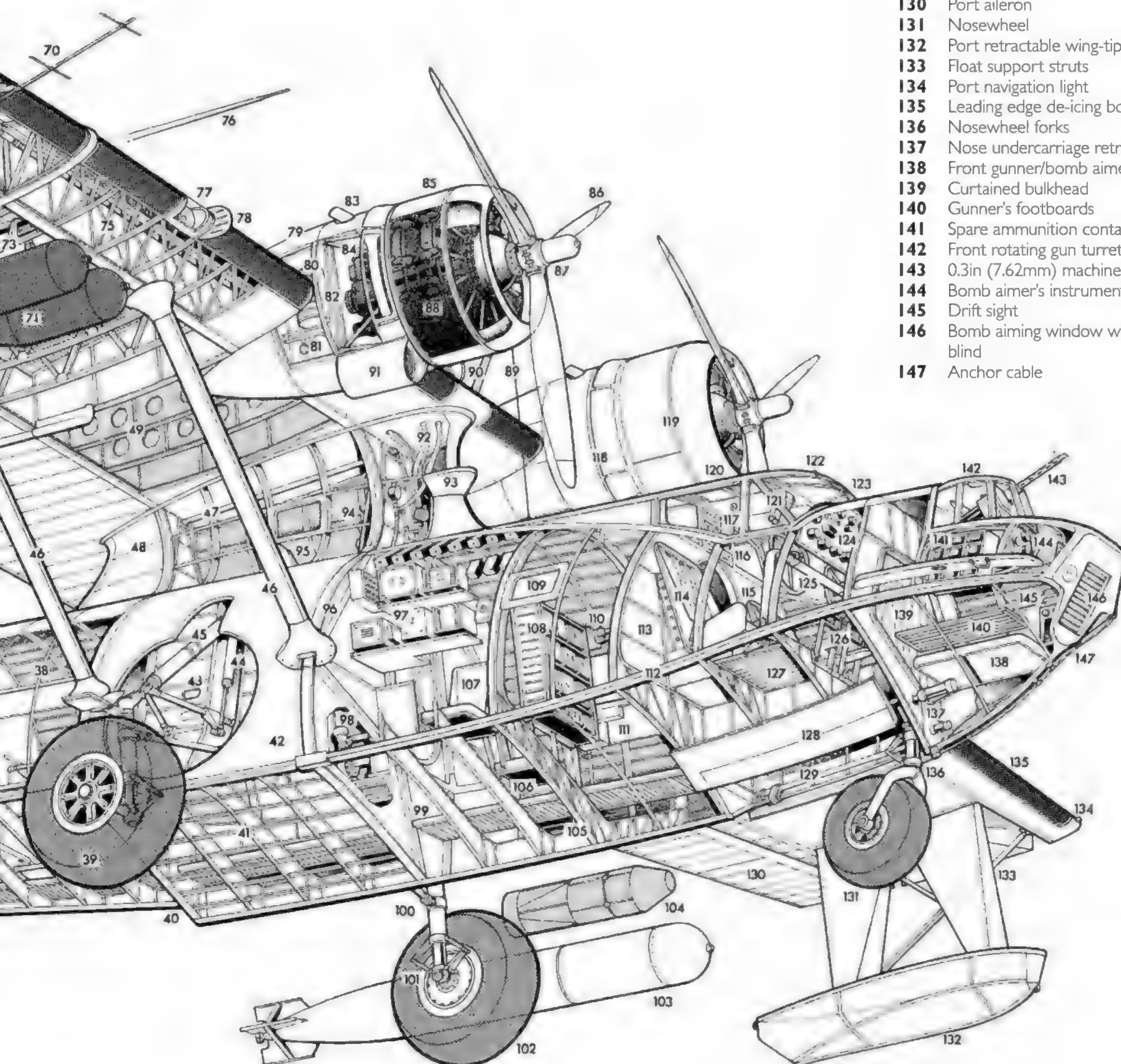
Float support struts
- 59

Retraction linkage
- 60

Fabric-covered starboard aileron



- | | | | | | |
|----|-------------------------------------|-----|---|-----|--|
| 61 | Static discharge wicks | 83 | Exhaust stub | 103 | Mark 13-2 torpedo |
| 62 | Wing-tip aerial mast | 84 | Engine bearer struts | 104 | 450lb (204kg) depth charge |
| 63 | Float up-lock | 85 | Detachable engine cowlings | 105 | Forward fuselage frame construction |
| 64 | Float leg housing | 86 | Curtiss Electric three-bladed constant-speed propeller, 12ft (3.66m) diameter | 106 | Navigator's seat |
| 65 | Starboard navigation light | 87 | Propeller hub pitch-change mechanism | 107 | Radio/radar operator's seat |
| 66 | Leading edge de-icing boot | 88 | Pratt & Whitney R-1830-92 Twin Wasp two-row radial engine | 108 | Radio rack |
| 67 | Float retracting gear | 89 | Aerial cable lead-in | 109 | Cabin side window |
| 68 | Front spar | 90 | D/F loop aerial | 110 | Autopilot servo controller |
| 69 | Wing rib/stringer construction | 91 | Oil cooler | 111 | Navigator's chart table |
| 70 | ASV radar aerial | 92 | Control runs through pylon front fairing | 112 | Fuselage chine member |
| 71 | Outer wing panel attachment joint | 93 | Pylon step | 113 | Cockpit bulkhead |
| 72 | Wing lattice ribs | 94 | Engineer's control panel | 114 | Co-pilot's seat |
| 73 | Bomb carrier and release unit | 95 | Flight engineer's seat | 115 | Pilot's seat |
| 74 | Two 500lb (227kg) bombs | 96 | Wing mounting fuselage main frame | 116 | Pilot's electrical control panel |
| 75 | Leading edge nose ribs | 97 | Radio and radar control units | 117 | Sliding side window |
| 76 | Position of pitot tube on port wing | 98 | Cabin heater | 118 | Engine cowling cooling air gills |
| 77 | Landing lamp | 99 | Front cabin walkway | 119 | Port engine nacelle |
| 78 | Landing lamp glare shield | 100 | Port main undercarriage leg strut | 120 | Cockpit roof escape hatch |
| 79 | Starboard engine nacelle fairing | 101 | Torque scissor links | 121 | Overhead throttle and propeller controls |
| 80 | Hydraulic accumulator | 102 | Port mainwheel | 122 | Windscreen wipers |
| 81 | Engine oil tank | | | 123 | Curved windscreens |
| 82 | Fireproof bulkhead | | | 124 | Instrument panel |



- | | |
|-----|--|
| 103 | Mark 13-2 torpedo |
| 104 | 450lb (204kg) depth charge |
| 105 | Forward fuselage frame construction |
| 106 | Navigator's seat |
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| 119 | Port engine nacelle |
| 120 | Cockpit roof escape hatch |
| 121 | Overhead throttle and propeller controls |
| 122 | Windscreen wipers |
| 123 | Curved windscreens |
| 124 | Instrument panel |
| 125 | Control column yoke and handwheels |
| 126 | Rudder pedals |
| 127 | Cockpit flooring |
| 128 | Nose undercarriage hatch doors |
| 129 | Nosewheel bay |
| 130 | Port aileron |
| 131 | Nosewheel |
| 132 | Port retractable wing-tip float |
| 133 | Float support struts |
| 134 | Port navigation light |
| 135 | Leading edge de-icing boot |
| 136 | Nosewheel forks |
| 137 | Nose undercarriage retraction jack |
| 138 | Front gunner/bomb aimer's station |
| 139 | Curtained bulkhead |
| 140 | Gunner's footboards |
| 141 | Spare ammunition containers |
| 142 | Front rotating gun turret |
| 143 | 0.3in (7.62mm) machine gun |
| 144 | Bomb aimer's instrument panel |
| 145 | Drift sight |
| 146 | Bomb aiming window with protective blind |
| 147 | Anchor cable |

CONSOLIDATED PBY

"THE SENTINEL OF THE PACIFIC"



EUROPEAN REPRESENTATIVE

N.V. NEDERLANDSCHE VLIEGTUIGENFABRIEK
FOKKER
AMSTERDAM

H. SOMBERG



**Canadian Vickers SA-10A Catalina
43-3939, United States Air Force, 7th Air
Force, 4th Rescue Squadron, Hamilton
Air Force Base, California, 1948**

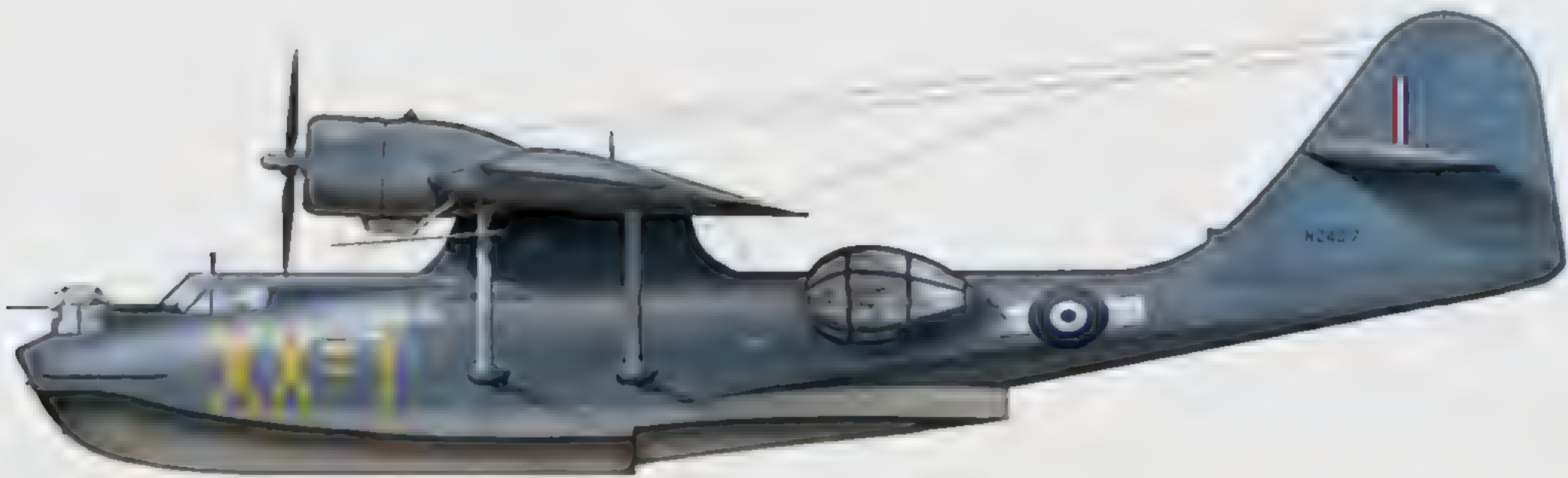
Rolling off the production line as PBV-1A BuNo 67903 for the US Navy, this was one of 230 examples of the Canadian Vickers built PBY-5As handed over instead to the USAAF as the OA-10A (OA Observation/Amphibian). Assigned the serial 44-33939, it was redesignated as a search and rescue SA-10A (SA - Search/Amphibian) in 1948 when the USAF reserved the 'A' designation code for attack aircraft. Seen here while serving with the 4th Rescue Group at Hamilton Air Force Base in California in 1948, it was sold to the Cuban Navy in 1958. Withdrawn from use three years later, it has been suggested the aircraft was scrapped soon after.

All profiles Andy Hay-Flyingart





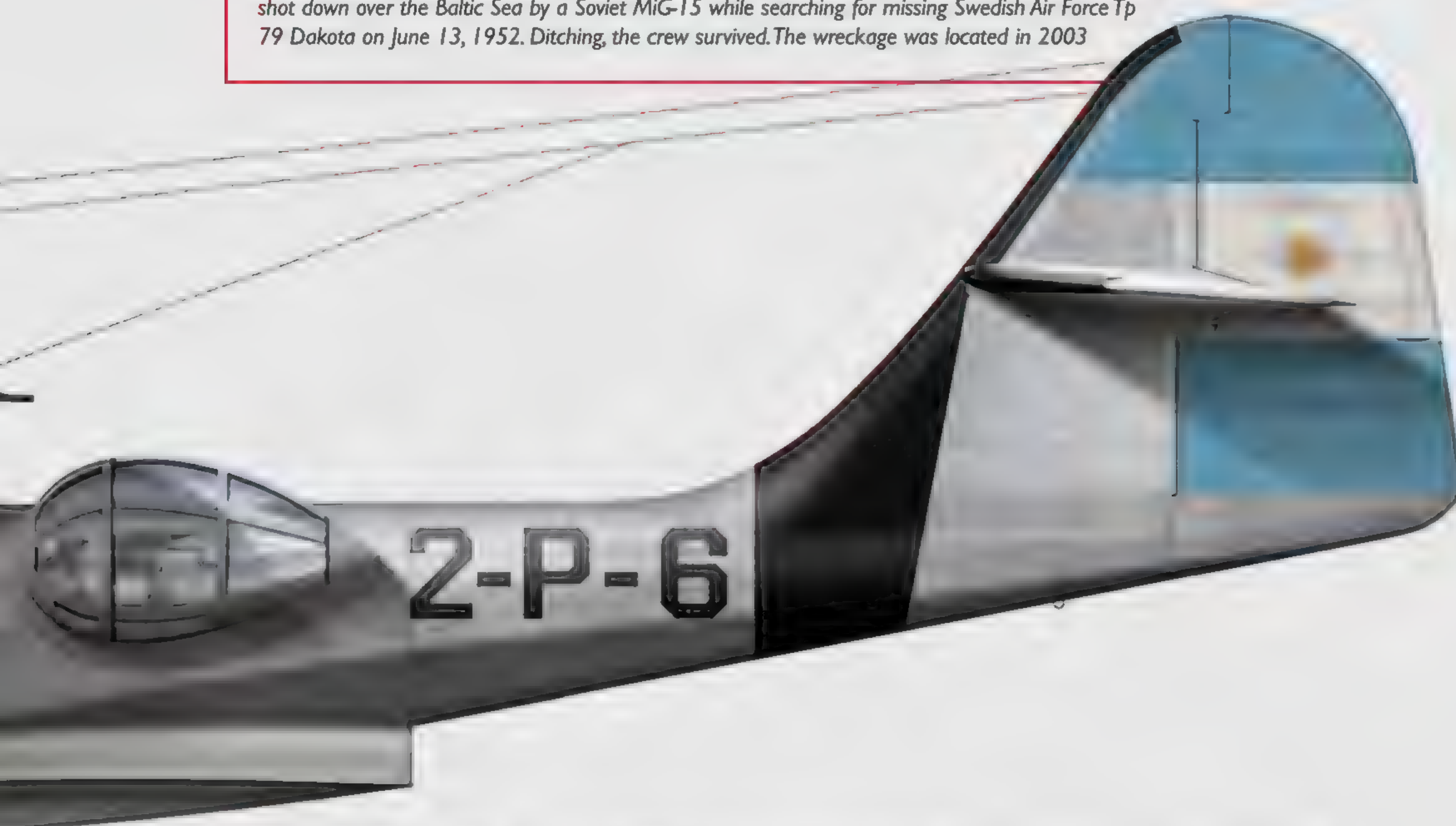
Consolidated Catalina Mk.I W8406/WQ-Z Royal Air Force, 209 Squadron, RAF Castle Archdale, Northern Ireland, 1941. One of the 109 Catalina Mk.Is purchased directly by the RAF, W8406 was handed over in early 1941. Delivered to 209 Squadron at RAF Castle Archdale, Northern Ireland soon after, it became WQ-Z. For many years, it was thought W8406 was the 209 Squadron Catalina that found the German battleship 'Bismark' on May 26 that same year. However, its code had been transferred to 209's AH545 in late April 1941



Consolidated PBY-5 Catalina NZ4017/XX-T, Royal New Zealand Air Force, No.6 Squadron, Guadalcanal, Solomon Islands, 1943. Delivered in 1943, NZ4017 served exclusively across the South Pacific with No.6 Squadron. It was disbanded overseas in August 1945. Flown to New Zealand and placed into storage post war, it was declared surplus in 1951 and broken up in 1952. Note the five 'Dumbo' marks forward of the cockpit added after NZ4017 'picked-up' five B-24 Liberator crewmen from the Pacific Ocean on February 4, 1944



Canadian Vickers Tp 47 Canso 47002/02, Swedish Air Force, F2 Wing, Hågernäs Air Base, Sweden, June 13, 1952. The second of three Tp 47s delivered to Sweden post war for the air/sea search/rescue and reconnaissance role, this Tp 47 was shot down over the Baltic Sea by a Soviet MiG-15 while searching for missing Swedish Air Force Tp 79 Dakota on June 13, 1952. Ditching, the crew survived. The wreckage was located in 2003



Canadian Vickers PBV-1A Canso 0238/2-P-6, Argentine Naval Aviation, Patrol Squadron 6, 1955. Having served with the Royal Canadian Air Force as '9841' from October 1943 until September 1945, this aircraft was sold to the Argentine Navy under a War Assets Corporation sale in June 1974. Delivered there in October that year as '0238', it served across the nation's Naval Aviation Command until its withdrawal in 1964. The aircraft was scrapped in Argentina soon after



Consolidated PBV-1 Catalina 0135/12-P-11, United States Navy, Patrol Squadron 12-F (VP-12F), Patrol Wing 1, Naval Air Station Seattle, Washington, 1937. One of the initial 60 airframes ordered by the US in June 1936, 0135 was the 34th Catalina accepted by the US Navy when was delivered to NAS Seattle at Sand Point, on Lake Washington on March 19, the following year. Assigned to VP-12F, it remained active until September 1944. It is believed to have been scrapped soon after

In March 1944, as part of Operation Wicketkeeper, Flt Lt Nash and crew flying 262 Squadron Catalina FPI 74/P destroyed U-boat UIT-22 by straddling it with six 250lb depth charges from a height of only 75ft. UIT-22 went down taking with it Oltn zur See Karl Wunderlich and his crew. It was the final U-boat sinking in South African waters
Piotr Forkasiewicz

South African sub-hunters

Despite operating in a relative backwater of Germany's U-boat war, the Catalinas of 262 Squadron and its successor established a fine operational reputation, as **Andrew Thomas** reveals



Following Italy's entry into the war on June 10, 1940, the subsequent closing

of shipping routes through the Mediterranean and Suez Canal forced most sea traffic from India and Australasia to round for the Cape of Good Hope on the southern tip of Africa. The German Navy High Command recognised the importance of the Indian Ocean and South Atlantic trade routes and sent small, but significant, numbers of U-boats and support ships to these remote areas to disrupt them. To counter this, the RAF formed a number of patrol squadrons stationed around the Indian Ocean, while the South African Air Force (SAAF) established similar units on home soil.

The sole RAF PBY Catalina unit to be based in South Africa was 262 Squadron. Formed under Wg Cdr Gerald Wallace at Congella in Durban Harbour on South Africa's east coast in late 1942, it began operations in February the following year. As well as anti-submarine patrols, the unit was typically tasked with convoy escorts and occasional transport and air-sea rescue sorties. As the squadron accepted more aircraft, it extended its operational area to cover the waters around the Cape of Good Hope – a straight-line distance of some 800 miles southwest of Durban – to counter German U-boats transiting to the Indian Ocean. To cover this area, a detachment was established in the natural harbour at Saldanha Bay near the town of Langebaan, about 75 miles north of Cape Town.

Although 262 Squadron and the land-based SAAF maritime patrol units flew countless hours and patrols, they encountered few enemy submarines. It was soon realised that intelligence was to be a key factor in the tasking. Although an RAF squadron, 262's operational activities were initially controlled by the SAAF Coastal Area Command (CAC). However,





Above
Armed with six depth charges underwing, Catalina Mk.Ib FP279/D of 262 Squadron is at anchor in Saldanha Bay around April 1944. On February 2 the following year, this aircraft was assigned the code 'G2'
L Collin

to regularise the situation, it was officially placed under the CAC's control on November 27, 1943, and absorbed into South Africa's Union Defence Force (UDF), becoming a SAAF squadron in all but name. As a result, it also gained a training task for SAAF personnel, many of whom joined the unit when it came under the command of Wg Cdr Dennis Esmonde-White the following month.

Although headquartered at Congella, due to congestion most of the squadron's operational flights were flown from its detachments on Lake St Lucia, about 90 miles north along the coast from Durban and Langebaan.

Operation Wicketkeeper

Patrols and convoy escorts covering shipping transiting South African waters continued

well into 1944, albeit with little action to relieve the monotony. Severe weather, particularly off the Cape, occasionally offered the crews more excitement than they wished for!

During early March, naval intelligence at the UDF's Combined Headquarters indicated that two U-boats – UIT-22, a former Italian Navy example similar to Germany's Type IXC, and U-178, a Type IXD2 – were planning to rendezvous in the waters south of Cape Town. Almost immediately, it initiated Operation Wicketkeeper to intercept and destroy them. In response, 262 Squadron moved seven of its Catalinas down to Langebaan, tasked with executing Wicketkeeper alongside naval vessels and SAAF Lockheed PV-1 Venturas from 23, 25 and 27 Squadrons.

The U-boat's radio transmissions could be monitored and tracked using Allied radio direction finding (RDF) – it was this that had triggered the operation in the first place. Commencing on March 8, Flt Lt A M Fletcher's crew in Catalina Mk.Ib FP226/J completed a 15-hour creeping line ahead search without any sighting of the enemy submarines. Two more crews repeated the task the following day.

At 0420hrs on March 11, three 262 Squadron crews left Langebaan, captained by Flt Lt Fred Roddick of the Royal Canadian Air Force in FP279/D, Fg Off Oscar Surridge in FP251/A

and Flt Lt 'Gar' Nash in FP174/P. Heading south on pre-briefed routes, they were tasked with intercepting the U-boats heading for a rendezvous point about 600 miles south of Cape Town. With almost six hours of flying ahead of them just to get to the patrol area, Roddick flew a westerly track, Surridge an easterly and Nash took up the middle position.

During the transit, the Primus cooker being used to prepare breakfast for the crew in the galley of Nash's aircraft burst into flames, burning the face of Sgt Ted Walker. He was treated and placed into a bunk just as the alarm sounded – a 'flash' sighting report had been received from Roddick's aircraft. Nash later recalled: "I remember the Morse signal 'SSS – SSS' on the morning of 11 March, signaling that Flt Lt F J Roddick in Catalina 'D' was making his attack on a U-boat far south of our Catalina."

The submarine was UIT-22.

Sure strike

At 1048hrs, Flt Lt Roddick's crew had spotted a U-boat cruising on the surface at about ten knots on a westerly course some 585 miles from Langebaan. With Sgt Bill Hill firing the nose guns as they made their run, Roddick faced down heavy fire from the enemy vessel's 20mm and 37mm guns to straddle the U-boat with five 250lb depth charges on the first pass. Watching on, the Catalina crew saw the sea erupt around the submarine, which immediately started listing to starboard. With a depth charge 'hung-up', Roddick climbed to 200ft and positioned for a second attack. Successfully dropping the depth charge, it exploded immediately off UIT-22's bow. Clearly badly damaged, the vessel submerged 12 minutes after the initial attack. With Roddick ordering a smoke float be dropped to mark the datum, he assessed his own damage: the port wing and float mechanism were damaged and the starboard engine was leaking oil.

Shortly after 1130hrs, Flt Lt Nash's crew arrived to relieve Roddick, who turned for home.

Right
Flt Lt Fred Roddick RCAF is presented with the DFC (announced in the 'London Gazette' on April 7, 1944) for his part in the successful sinking of UIT-22 by the Canadian High Commissioner to South Africa
F J Roddick





“The depth charges exploded beneath the water's surface and the U-boat sank under the waves”

Almost immediately, the new crew could see the effectiveness of the attack by Roddick's team – debris and oil could be seen on the surface of the water where the U-boat had submerged.

But looks were deceptive. As Nash later recalled: “To my amazement, the U-boat surfaced in front of my eyes!”

Quickly ordering his crew to attack as he set up his run against the obviously crippled vessel, the third Catalina flown by Flt Lt Surridge arrived on the scene. Setting his own aircraft up on a parallel course to Nash's, the Germans peppered his aircraft with machine gun fire as he attacked. Nash later recounted: “Tommy Tromans in the bow turret opened up with his twin 0.3in Vickers machine gun. I could see the conning tower of the U-boat clearly and dropped all six 250lb depth charges from a height of only 75ft. It was a perfect straddle. The depth charges exploded beneath the water's surface and the U-boat sank under the waves. It was a formidable adversary.”

The attack had shattered the submarine, which disappeared in a welter of foam, oil and debris. Circling the ever-growing debris field, a bubble of thicker, darker oil rose to the surface after

about 10 minutes, confirming UIT-22 with Oltz zur See Karl Wunderlich and his 42-man crew had sunk. With all hands lost, it was the final U-boat sinking in South African waters.

Despite stormy weather, both crews remained in the area in case the U-boat somehow resurfaced. With eyes on the water, the crews worked hard to make sure that they didn't collide in the worsening weather. At 1400hrs, Nash's crew set course for Langebaan, where they alighted at 1725hrs after 13 hours in the air. Surridge's crew continued the search with a destroyer that had arrived at the

scene until 1730hrs when they set course for base.

That night, they and the other crews celebrated. In late April, Flt Lt Fred Roddick received the Distinguished Flying Cross (DFC) for his part in the action.

Dahomian tragedy

Despite success against UIT-22, Kptlt Wilhelm Spahr's U-178 had slipped through and continued on its way back to France.

At the end of March, CAC HQ alerted the squadron to the presence of another U-boat in the area and additional patrols were launched to cover merchant shipping. However, because of the upsurge in activity, 265 Squadron, (headquartered at Diego Suarez in northern Madagascar), detached three of its Catalinas Mk.Ibs and several crews to Langebaan in support of the search effort. They remained there until early June.

On March 31, Flt Lt Walter Wickson's crew in Catalina Mk.Ib FP274/B was tasked with finding and escorting the British-flagged 5,300-tonne freighter SS *Dahomian* to Cape Town. However, they never found the ship and the aircraft was recalled. That night, an explosion was reported and Capt Henry 'Nick' Honey's crew were sent out to search, but they didn't find anything. The following day it became apparent that the *Dahomian*, sailing

Left
Photographed from Fg Off Surridge's aircraft, Flt Lt Nash's crew in FP174/P make their attack run on UIT-22 in the face of heavy fire that can be seen splashing around the aircraft
A H Surridge

Below
Flt Lt 'Gar' Nash, seated second from left, poses with his crew shortly after sinking the German U-boat UIT-22
E S S Nash



Right
Flt Lt Wickson's crew flew Catalina Mk.Ib FP307/F – seen here being eased onto the surface of 262's base at Durban – on an abortive search for the German U-boat U-859
Via Dr A Banks



some distance from its anticipated position, had been torpedoed and sunk some ten miles southwest of Cape Point.

Three crews – including Honey's in FP275/B – and the Royal Navy frigate HMS *Test* conducted a search and eventually spotted wreckage. The *Dahomian*, carrying 5,198-tonnes of general cargo, 17 aircraft and mail, had been sunk by German U-boat IXD2 U-852 commanded by KLt Heinz-Wilhelm Eck, which had subsequently sailed north into the Indian Ocean. The South African armed whalers HMSAS *Krugerdsorp* and HMSAS *Natalia* rescued the *Dahomian*'s 49 survivors; two crew were killed during the attack.

A further operation began on May 26 following a U-boat sighting 25 miles off the Namibian port of Walvis Bay in south west Africa. Dubbed Operation Throttle, the first sortie was flown by Flt Lt Fletcher's crew in FP226/J,

“On his first operational flight with the squadron, Flt Lt McKirdy spotted the remaining survivors on a beach”

with Flt Lt Roddick's flying the following day in FP279/D. With no sightings by June 2, the hunters were recalled.

Further efforts

When shore-based direction finding fixed a U-boat's position in the Indian Ocean about 300 miles west of Durban during early July, three crews – Flt Lt Fletcher's in FP174/L, Fg Off Cover's in FP279/D and Flt Lt Lake's in FP288/G – were launched from Congella to search for it. They conducted a parallel track creeping line ahead search to a point 100 miles from the fix datum. Just as they reached the limit of the search, some 270 miles east-southeast of Durban, Fletcher's crew saw a U-boat surfacing. It was U-859, a Type

IXD2 captained by KptLt Johann Jebson.

Fletcher immediately positioned and attacked in the face of heavy and accurate fire from the submarine that damaged his aircraft. Nonetheless, Fletcher delivered an accurate attack and dropped five depth charges, the sixth 'hung up'. The charges straddled the vessel and exploded about 15ft from the hull as it took evasive action. Although further attacks were made, the last depth charge wouldn't release. Running for safety, U-859 disappeared below the surface and made off, leaving a trail of oil from its ruptured fuel tanks in its wake. Fg Off Cover's crew heard the alert message and flew to the area, remaining over the oil patch to increase its endurance, but made no contact. It was the last successful attack by a South African based aircraft of the war.

Further Catalinas were also sent to the area. Fg Off William Lake's crew in FP288/G found an oil slick and a fleeting radar contact that quickly disappeared. During the flight back to Durban, they attacked a suspected submarine, but it turned out to be an unfortunate whale. The search operation was suspended on July 7.

Below
The sombre remains of Catalina Mk.IV JX367/G2 at Richards Bay after it crashed on January 30, 1945 – killing both pilots
Dr A Banks



Ironically, the following day, a submarine was attacked again east of Durban by a Ventura. Believed to have been U-198, it is not thought to have been damaged. For their parts in what was the squadron's last action, Fletcher and Flt Lt R Williams were each later awarded the DFC.

South African strikers

The first SAAF commanding officer for 262 arrived on July 16, when Lt Col R D Madeley took over from Esmonde-White. Almost immediately, further U-boat activity was spotted in the squadron's area of responsibility.

Just the day before, the unescorted 5,100-tonne cargo steamer *SS Director*, en route to the Seychelles from Durban, was hit by a single torpedo from U-198. It sank in the Mozambique Channel southeast of Inhambane in Portuguese East Africa (today's Mozambique). Some of the 55 survivors, including Captain William Weatherall, were rescued by the Portuguese sloop *Goncalves Zarco* and landed at Lourenco Marques (now Maputo).

On his first operational flight with the squadron, Flt Lt McKirdy spotted the remaining survivors on a beach at Kosi Bay and dropped rations before radioing their location. The following day, Lt C Kavanagh DFC flew up to Lourenço Marques to assist the survivors.

Just over a month later, on August 20, the eastbound convoy DN-68 was attacked by the

U-boat IXD2 U-861 some 400 miles east of Durban. The 7,400-tonne freighter *Berwickshire* was sunk, while the 8,100-tonne tanker *Daronia* was hit by two torpedoes and heavily damaged. First on the scene was Fletcher in FP226/J. Arriving at 0535hrs, the crew began searching for survivors. Finding eight men in a raft, they learnt the rest had been picked up. At 1040hrs FP274/B, flown by Capt Lever's crew, arrived overhead the *Daronia* to escort the crippled vessel to port. Several other aircraft were sent to St Lucia to fly perimeter patrols around the convoy.

By now, 262 Squadron was largely manned by SAAF personnel, who continued to mount largely uneventful operational patrols from St Lucia and Langbaan. In late October, the unit took delivery of its first Catalina Mk.IV, which boasted more powerful engines

and provision for extra fuel tanks with partial self-sealing protection.

On November 28, Wg Cdr 'Gar' Nash, who although in the RAF was actually a South African, was appointed officer in command of 262 Squadron. At that time, the unit was flying around ten long-range anti-submarine patrols, convoy escorts and search and rescue missions per month across the sea lanes around South Africa. However, tragedy struck on January 30, 1945, when Catalina Mk.IV JX367/G2 crashed during a night landing on Richards Bay's Lake Umsingazi on the Natal coast, killing both Fg Off William Lake (RAF) and Capt Henry Honey (SAAF). Incredibly, three others – WOs Baker, Curtin and Burke – survived.

Shortly after, on February 15, 262 Squadron was



Left
Fg Off Oscar Surridge, seated second from the left, and his crew covered Nash's fatal attack on UIT-22 with gunfire, while capturing the assault on film
A H Surridge



Left
Personnel from 35 Squadron pose with Catalina Mk.Ib FP174/L at Langebaan during spring 1945. This aircraft was credited with the sinking of UIT-22
S Hanson

Right
Seen here during 1944, Catalina Mk.Ib FP257/F of 266 Squadron was written off following a fire while taking off on July 6 – the crew survived
D C Penny

Below
In early March 1944, naval intelligence at Combined HQ in Cape Town indicated that two U-boats were to rendezvous in the waters south of Cape Town. Therefore, Operation Wicketkeeper was initiated to intercept and destroy them

disbanded as an RAF unit and renamed 35 Squadron, South African Air Force. Other than its title, nothing changed. The unit's first operational sortie was an uneventful 15-hour anti-submarine patrol from Langebaan by Capt Winning's crew. Plt Off Allen flew the unit's first anti-submarine escort from Richard's Bay in Catalina Mk.IV JX362/H2. They were relieved on task by Capt Spoor's crew in Catalina Mk.Ib FP174/L.

By then there was little chance of any enemy submarines operating in South African waters, but escort patrols continued through March as a precaution. During the first full month of its existence, 35 Squadron flew ten anti-submarine escorts and three anti-submarine sweeps, as well

as conducting two air sea rescue and five weather reconnaissance sorties, all without significant incidents. On April 9, Capt Smith's crew provided cover for the Royal Navy escort carrier HMS Shah, being relieved by Capt Stewart's crew. A week later, Lt Col D A du Toit took command of the squadron.



That month, 35 Squadron flew more than 300 hours of operations, primarily as convoy escorts. There was a minor scare when the South African coast guard reported a possible U-boat off the coast of Natal on April 28. Scrambling to search the area, Capt Winning's found nothing.

Four days previously, du Toit had flown 35 Squadron's first Short Sunderland Mk.V, PP153/M, to St Lucia, where he arrived with a very low fly-by. However, because of the increased size of the new aircraft type, the squadron moved its operations to Richard's Bay, although Congella remained its permanent HQ. Conversion training began two days later, but PP153 was damaged when it struck a submerged object while alighting on Lake Umsingazi. Although du Toit managed to get airborne almost immediately, the hull had been ripped open. Despite the damage, he managed to land the battered machine on a nearby sand bank, and although all the crew survived the incident, the aircraft was written off.

That same day Sunderland Mk.V NJ259/L Little Zulu Lulu arrived at Congella. With the Catalinas' days numbered, the squadron flew its final operational flights with the type across May 4 and 5, when Flt Lt McColl and Capt Winning provided an anti-submarine screen for a transiting cruiser. Three days later, Germany surrendered.





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'BLACK BATS', EAGLES

The little-known RB-69A was used by the CIA and Republic of China Air Force to mount covert overflights across the mainland of communist China. **Dr Kevin Wright** explores the career of the USAF type that never was...



From its establishment in 1947, the Central Intelligence Agency (CIA)

engaged in an aggressive campaign countering communist influence across the world. In East Asia, working with the Nationalist Chinese government in Taiwan, it dropped agents, supplies, propaganda material and equipment using modified Boeing B-17 Flying Fortresses, Martin B-26 Marauders, Consolidated P4Y Privateers, and Curtiss C-46 Commandos. But by the mid-1950s these aircraft needed urgent modernisation.

Covert procurement

Project 'Wild Cherry' was to provide reconfigured Lockheed P2V Neptune maritime patrol and anti-submarine warfare platforms for clandestine CIA operations. Five P2V-7U airframes bound for the US Navy (USN) were diverted from the production line and allocated United States Air Force (USAF) serials 54-4037 through 54-4041; two more were later loaned from the USN and assigned serials 54-4042 and 54-4043.

Heavily modified by Lockheed at its famed 'Skunk Works' in Burbank, California, just across from the Neptune production line, they were designated

RB-69As. Painted a dark sea blue, dulled to a dark grey, this gave the aircraft an overall 'black' appearance.

In the CIA they were casually referred to as the 'P2V'. Primarily used in operations against communist China, the five original airframes would all be lost in action, along with the crews flying them.

The type was well suited to this new role. Intended for low-level operations, it boasted long-range and good payload performance. Powered by two 3,400hp Wright Cyclone R-3350-32W engines fitted with exhaust flame suppressors, each drove a four-bladed propeller. Like the P2V, the RB-69 was equipped with

Below
Seen at Eglin Air Force Base during testing circa 1957, RB-69A 54-4037 was shot down over mainland China on June 11, 1964. Note the aircraft is carrying standard USAF markings and serials.
National Museum of the USAF





AND WILD CHERRIES

two underwing pod-mounted Westinghouse J-34-WE-36 turbojets rated at 3,400lb st each.

Internal modifications were extensive. For agent-dropping tasks, the crew escape hatch under the centre of the rear fuselage, often referred to as a 'Joe Hole', was enlarged and sufficient space made for four to six agents 'down the back'. The weapons bay could be used for direct load drops or fitted with a specially designed leaflet dispenser that could eject more than 500,000 leaflets during a single flight. Observation bubbles were fitted on the fuselage roof and sides, while the aircraft's usual wing tip tanks were removed. However, it was the onboard electronic SIGINT (signals intelligence) collection, threat warning and navigation equipment that distinguished the RB-69A.



Even before its evaluation process was completed, two RB-69As were delivered to Germany's Wiesbaden Air Base (AB) – one in April and the other in May 1957. To maintain 'plausible deniability', the CIA mainly employed exiled Polish and Czech pilots rather than US aviators. They became the unofficial 'D Flight'

of the resident 7405th Support Squadron, which was already flying covert reconnaissance missions through the Berlin Air Corridors and along the Inner German Border with heavily modified USAF transport aircraft.

Today, the details of its CIA operations remain classified.

That said, ➡

Above
Project Goshawk:
A rarely seen view
of an unidentified
ROCAF-marked
RB-69A during the
type's service in
Taiwan. Note the
aircraft is in 'ferry'
configuration with
under wing and
wing tip tanks
All Taiwan Ministry
Of National Defense
unless stated



Right
The crew of
a ROCAF-
marked RB-69
are given their
final instructions
before another
clandestine
mission over
mainland China
from Hsinchu in
1961



the RB-69s are credited with mapping huge parts of the Soviet electrical grid across eastern Europe while flying nocturnal low-level missions equipped with an early infrared device. In 1959 the aircraft were transferred to the Air Proving Ground Command at Eglin AFB in Florida, as part of the CIA's reorganisation of air assets. This became the main US location for Agency RB-69 crew training and new equipment testing.

Taiwanese tenure

Preparations for the RB-69As arrival at Taiwan's Hsinchu AB commenced in 1957. Located southwest of capital Taipei, the airfield already housed B-17, B-26 and P4Y covert operations aircraft. The CIA assigned the project the cryptonym STPOLLY while the Nationalist Republic

of China Air Force (ROCAF) dubbed it 'Goshawk'.

The roughly 30 strong American team at Hsinchu comprised a detachment commander and a mix of CIA, USAF, and USN personnel along with several civilian contractors under the cover of the Naval Auxiliary Communications Center (NACC). Although NACC personnel took part in both training and test flights, they never participated in overflight missions. With the first two RB-69As arriving in December 1957, their USAF markings were replaced with ROCAF ones. In January 1958 the aircraft were assigned to the ROCAF's 34th Squadron – nicknamed the 'Black Bats'. Operating alongside the unit's long-established B-26 and B-17 missions, the 34th soon boasted

four RB-69As, three crews totalling 46 officers and airmen, and 76 groundcrew, plus 83 civilians. A leased C-46 and C-47 were used for support, while a TB-26 was used as an instrument trainer.

Collecting SIGINT from the communist People's Liberation Army Air Force (PLAAF) air defence network soon became the United States' priority. A mission crew normally consisted of 11 or 12. Flight deck crews were usually trained in the US, with the standard two pilots 'up front' typically supplemented with a third. Three navigators ensured the precision required for the type's low-level night operations. While one monitored progress by traditional dead reckoning, another positioned in the Plexiglass nose observed ground features and watched for enemy activity. The third monitored the onboard navigation equipment, which included various forms of RADAN (Radar Doppler Automatic Navigation).

An early terrain-following radar (TFR) was tested on the RB-69As at Hsinchu but was not sufficiently developed to be successful. Dubbed the APQ-56, it used an early sideways-looking ground mapping radar mounted in two 26ft long, 24in diameter tube antennas fixed horizontally on either side of the fuselage between the wing trailing edge and tailplane. Accurate down to just 300ft, it was often rendered

Right
Prior to the
arrival of the
RB-69A, a small
number of
P4Y2 Privateers
(alongside
converted B-17s)
were operated in
the covert ELINT
and air-drop role





“All this additional equipment added considerably to the RB-69’s constantly growing weight”

useless with the RB-69As flying even lower during operational missions. In the aircraft’s rear, an electronics operator monitored Chinese VHF/UHF air defence and ground control voice communications with his System III equipment. Recording the transmissions onto AMPEX reel tape recorders, these were later transcribed for analysis.



To collect intelligence on enemy radars the RB-69 was fitted with an APR-9 detection system and pulse analysers – including the APA-74, and a QRC-15 direction finder. A fixed camera photographed the radarscopes and frequency pulse-analyser displays at regular intervals for later examination. The RB-69’s electronics were progressively updated as newer and better systems were developed in line with technological advancements – including the improved ALQ-28 receiver.

Another operator (who periodically reported their progress back to Taiwan) searched for higher frequency electronic signals and controlled the aircraft’s noise jammer to counter enemy radars. Fitted with an APS-54 radar warning receiver (RWR), later self-defence systems included a signal generator that projected a false position. Equipped with a broad range of frequency jammers, chaff was also used, initially thrown manually through the

fuselage windows when ordered; the latter was replaced by an automated system developed by US and Taiwanese staff at Hsinchu. However, all this equipment added considerably to the RB-69’s constantly growing weight.

Typically, there was at least one, although usually two, loadmasters ‘down the back’, doubling as observers watching from the upper fuselage and side Plexiglass bubbles.

If these low-level night overflights were not inherently hazardous enough, there were constant concerns that local communist agents at Hsinchu reported the RB-69A’s movements. In an attempt to confuse PLAAF defences, two aircraft often departed at the same time, while some missions were launched from Kunsan in South Korea – around 840 miles to the northwest. To make matters worse, communist fishing fleets operating throughout the Taiwan Straits regularly reported air ➤

Above
Of the original five, 54-4037 was the most ‘famous’ of the RB-69s having been the subject of a series of official USAF photographs while undergoing testing at Eglin during 1957



Right
Fitted with
underwing and
wing tip fuel
tanks, this RB-
69A awaits its
next sortie from
an undisclosed
location in
Taiwan

and sea movements over and around Taiwan. When over the Chinese mainland, there were coast watchers, inland radars, searchlights, anti-aircraft guns and fighters to contend with.

'EAGLE 513'

As a mission example, on June 19, 1958, an RB-69A – callsign 'EAGLE 513' – departed Hsinchu at 1700hrs. Flying low level across the South China Sea, it made landfall under the cover of darkness north of Shanghai at 2147hrs. Crossing the coast at 1,500ft, the aircraft dropped to between 500ft-800ft and followed a long looping route inland.

With overflights conducted during the dark moon phase to reduce the aircraft's vulnerability to the improving People's Republic of China (PRC) air defences, flying the planned route was challenging – even with three navigators. Features such as rivers, lakes and towns were already difficult to spot, let alone in the dark, while cities were often blacked out by the communist authorities in an attempt to confuse intruders. While the nose navigator scanned ahead, he spotted the glow from an unidentified aircraft's tailpipe as it crossed



about 700m ahead of the RB-69 and disappeared into the night.

Although payloads of more than 2,000lb were not unusual, 'EAGLE 513' carried just over 1,500lb of cargo comprising 311,000 leaflets, 20 rice bags, 20 child kits and 50 undescribed utility packages. Despite the clandestine nature of the RB-69's missions, small food and clothing packages were often dropped – particularly during times of shortage on the mainland – with appropriate propaganda messages.

As '513' approached its coastal exit point, it dropped to 300ft having been over PRC territory for just short of six hours. Turning for Hsinchu, it landed

at 0825hrs after a gruelling 15½ hours in the air.

Though RB-69A agent drops over the Chinese mainland were infrequent, agent security was taken very seriously. Forbidden from mixing with the Hsinchu personnel before boarding the drop aircraft, the RB-69s would stop briefly at a remote part of the airfield while taxiing for departure to allow them to climb up through the 'Joe Hole'. Most drops were unsuccessful, with the individuals often captured shortly after landing.

Exotic equipment

During the RB-69's tenure in Taiwan, a three-camera night photographic suite was tested in the aircraft's forward bay. However, the only way targets could be illuminated adequately at the time for nocturnal photography was to operate wing tip-mounted arc lights – which would have immediately attracted the enemy's attention. An alternative was a synchronised strobe flashlight system developed to illuminate targets, but this was equally dangerous and also affected the crew's night vision. To add to this, they had to fly within just +/- 25ft of 500ft to ensure images were adequately focussed. The resulting photographs covered such a small area that their potential value was very limited. As such, further work was discontinued in September 1959.

With the USN evaluating the Fulton surface-to-air recovery

“Thirty companies of anti-aircraft units and three radars that deployed in a 20 mile-long, five-mile-deep box, sat in wait below”



Below
Starting life
as a US Navy
Lockheed P2V-7
Neptune in 1954,
BuNo 135564
was converted
to an RB-69A
and transferred
to the CIA in
December 1964.
The final example
of the clandestine
type produced,
it is seen shortly
after its return to
the US in 1967
following the RB-
69's withdrawal
from Taiwan. Note
the visible missile
rails under
the wing



system to snatch people up from the ground, trials using an RB-69A were conducted at Florida's Eglin AFB from August 1959; the aircraft in question was 54-4037, the primary test airframe for the type. In 1961 an RB-69A was detached to Kadena in Japan, in preparation for a plan to rescue CIA B-26 pilot, Allen Pope. Shot down over Indonesia on May 18, 1958, he was later sentenced to death. However, the plan was abandoned when Pope's sentence was commuted, with later negotiations securing his release.

Towards the end of operations, RB-69s were fitted with an air sampling pod to collect radioactive samples, as the

US stepped up its search for indications of China's nuclear weapons programme.

The first of five

The first RB-69A loss was a tragic accident. On March 25, 1960, 54-4040 departed on a radio silent ferry flight from Hsinchu to Kunsan. From there it was to conduct an overflight across northeast China. As it crossed the South Korean coast, it struck an 800ft peak just below the summit, killing all 14 people on board, including 34 Squadron's CO.

The PLAAF rapidly developed an integrated air defence system using fixed and mobile radar sites, searchlights, anti-aircraft

guns and later SA-2 surface-to-air-missiles – co-ordinated with fighters – to bring down intruders. Nearly all of the RB-69As penetration missions were detected.

In his book *The Black Bats: CIA Spy Flights Over China From Taiwan 1951-1969*, British author Chris Pocock has written extensively about the Taiwanese-CIA operations – especially the PLAAF efforts to counter them with Mikoyan-Gurevich MiG-15 *Fagot* and -17 *Frescos*. That said, the MiGs were largely unsuccessful because they were too fast. With only a few seconds to line up and fire, they tended to overshoot their target. An overflight on October 21, 1960, resulted in the PLAAF scrambling 13 MiG-17PFs – one of which flew into high ground attempting to achieve a favourable firing position.

To overcome this, the PLAAF mounted Izumrud airborne interception radars – the same as those equipping its MiGs – into several of its ex-Soviet Tupolev Tu-2 *Bat*, twin-engine, high speed, light bombers. Armed with twin 23mm cannon, while the Tu-2s were not initially successful, it made the RB-69 crews' already inherently dangerous mission even

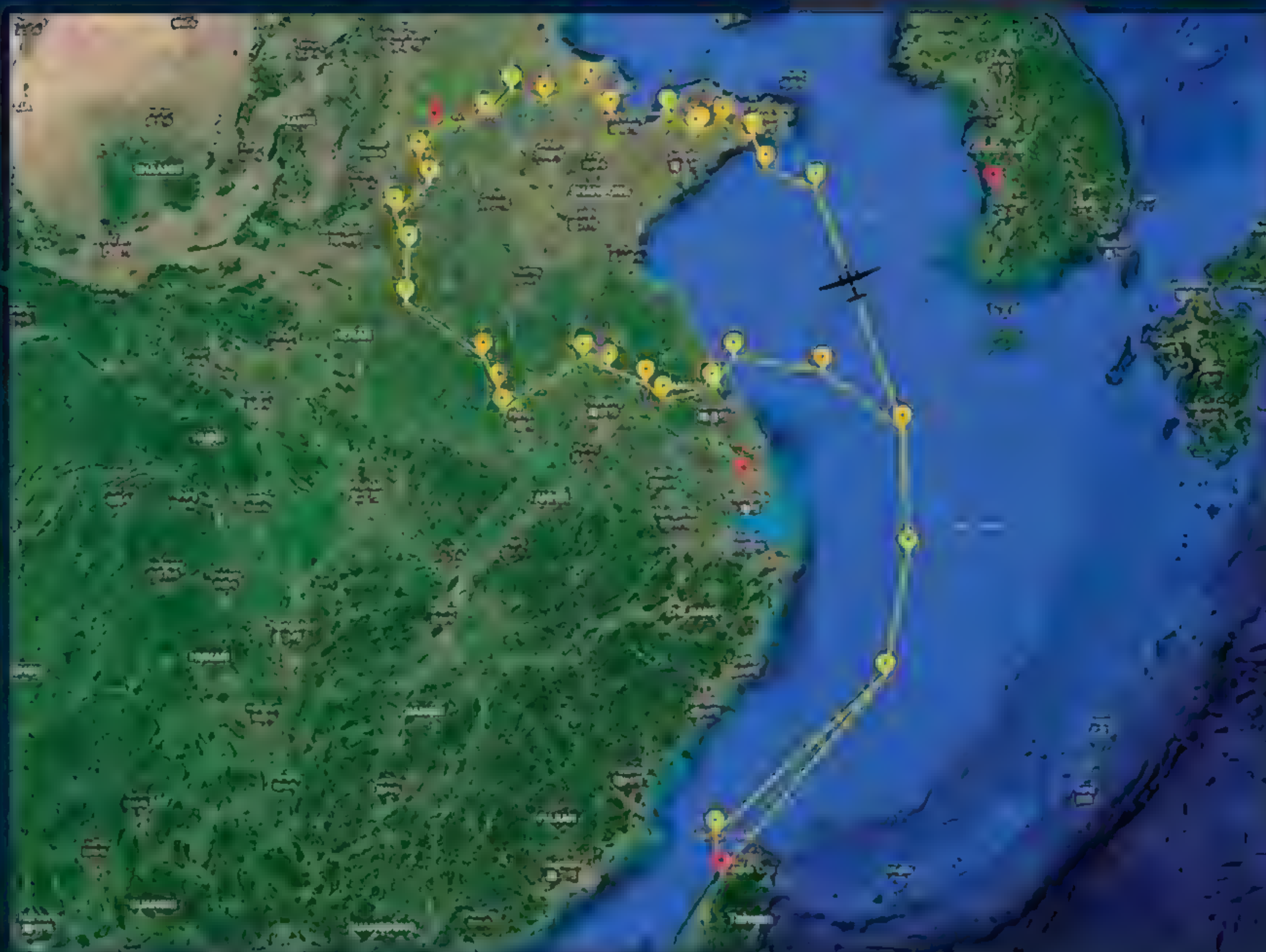
Left

A pair of 'Black Bats' P4Y2 Privateers prepare for a rare daylight mission from Hsinchu circa 1960

Below

Curtiss C-46 Commando transports – including '8356' – were used to support RB-69A operations from Kunsan Air Base in South Korea





Above
The route flown
by 'EAGLE'
513' during its
gruelling 15½-
hour mission on
June 19, 1958
Via Author

more so. Chris Pocock also describes how a small number of the PLAAF's Tu-4s – a Soviet copied B-29 gifted to China dubbed *Bull* by NATO – were also modified to counter the low flying RB-69As. Gun positions were fitted with special infrared sights, while the original search radar was moved from the belly to the upper fuselage to act as an airborne intercept set. Provision was also made for carrying extra equipment operators. Again, although not successful in downing an RB-69A, the constant harassment made their missions much more difficult.

Caught in a trap

Although no RB-69 had yet been lost to Chinese air defences, some were damaged by the Tu-2s and -4s, enemy fighters and anti-aircraft guns. However, that changed on November 6, 1961, when a carefully laid trap caught 54-4039 in the open. Departing Kunsan for a low-level penetration flight over mainland China, the aeroplane crossed the Liaodong Peninsula. Unbeknown to the crew, 30 companies of anti-aircraft units and three radars that deployed in a 20 mile-long, five-mile-deep box, sat in wait below. As

the intruder approached, the middle radar was activated. Detected by the RB-69's RWR, it altered course away from the threat – unknowingly towards other units further along the defensive line. Waiting until the last possible moment, the defences were simultaneously activated. Searchlights immediately illuminated the RB-69. Despite taking evasive action, it was quickly brought down by the Chinese anti-aircraft guns, killing all 13 crew.

With a temporary halt in operations after the incident, 54-4038 and its crew were lost just two months later on January 8 following the resumption of missions. Tasked with electronic intelligence-gathering and leaflet-dropping, the aircraft crashed into Korea Bay.

On June 19, 1963, ROCAF Capt Zhou's RB-69A (54-4041) was subjected to nine unsuccessful intercept attempts by PLAAF MiG-17PFs and Tu-4s. As 54-4041 passed the MiG base at Xiangtang, just to the south of Nanchang, another was scrambled. Flown by the deputy base commander, he attempted both a side-on and stern attack – but failed each time. With PLAAF controllers guiding him in for

a third attempt, the RB-69's jammer broke the enemy jet's radar contact as the pilot spotted a stray exhaust flame escaping from the protection of its suppressors. Homing in and firing a two-second burst, the RB-69 burst into flames – killing all 14 on board. As a result, penetration missions over mainland China were again paused.

In July 1963, the 'Black Bats' began conducting agent and airdrop missions over Vietnam with Fairchild C-123 Providers. However, North Vietnamese air defences – with China's help – were soon rapidly expanded. With concerns about the Provider's vulnerability, RB-69As began mounting occasional SIGINT missions across Vietnam to identify possible threats.

After a long cessation, Chinese mainland overflights resumed in March 1964. However, tragedy struck on June 11 when the People's Liberation Navy used a flare dropping technique to bring down a fifth RB-69A – 54-4037. As the aircraft flew towards the Shandong Peninsula, a MiG-15 and an Ilyushin Il-28 *Beagle* were scrambled in the direction of the intruder. The RB-69A evaded the pair by altering course several times, but they eventually reacquired it. Climbing to 10,000ft, the Il-28 released flares that illuminated 54-4037 some 7,000ft below it. Now the MiG-15 could see its prey ahead and fired. With its rounds tearing into the American machine, the MiG almost struck the ground itself as the pilot followed the stricken RB-69 down. From its wreckage, Chinese military personnel recovered three of the four Sidewinder air-to-air missiles that had recently been fitted for self-defence. Intended to shoot down the MiGs as they overshot their prey, it was a little too late for the RB-69s.

Winding down

Having lost the original RB-69s, the last remaining example – 54-4042, ex-BuNo 150283 –



was transferred to the CIA in September 1962; this was followed by 54-4043 (ex-BuNo 135564) in December 1964. With the United States' attention switching to peripheral SIGINT flights off the coast of China, around ten such flights a month were scheduled – sometimes with NACC crew participation. Missions could last more than 11 hours, with the aircraft operating as close as 20 miles off the mainland. When PLAAF interceptors were launched, the RB-69s simply retired some 60 miles from the hostile territory.

As peripheral flights continued, there were just two more penetration missions – one on December 24, 1965, and the last on June 15, 1966. With the RB-69A completing its final peripheral mission in mid-November 1966, the type left Hsinchu in January 1967. Ferried back to the US, both 54-4042 and 54-4043 were soon returned to the USN inventory and designated 'SP-2Hs' the following month.



Left
US Navy
Lockheed EP-3B
Orion 149678
on strength
with Fleet Air
Reconnaissance
Squadron (VQ-1)
'World Watchers'
in 1970. Delivered
to the service as
a P-3A in October
1962, it was one
of three obtained
by the CIA under
Project STSPIN
to replace its RB-
69As US Navy

By then, the CIA had started replacing the RB-69As with newly modified Lockheed P-3A Orions under Project STSPIN. With the first arriving at Hsinchu in May 1966, their days were already numbered as the end of joint operations with the Taiwanese rapidly approached. With both sides' mission objectives becoming too divergent, the Taiwanese priorities were largely directed towards carrying on the low-level overflight insertion and propaganda programme, while

the US was firmly focused on SIGINT collection. The two P-3s were withdrawn in late 1966, having never undertaken a mainland overflight.

While most of the 'Black Bats' missions remain classified, an internal CIA draft history entitled *Low-Level Technical Reconnaissance Over Mainland China (1955-66)* written in 1972 is known to exist. However, it was not expected to be declassified by the CIA until sometime after 2022. We are still waiting for it now... 🇺🇸

Below
Although not a
genuine RB-69A,
former US Navy
Lockheed SP-2H
Neptune BuNo
147954 has been
finished in the
type's ominous
dark sea blue
as 54-44037 –
one of the 'secret
seven' used by the
CIA. The aircraft
is on display at
the Museum
of Aviation at
Warner Robins in
Georgia
Alan Wilson

“Intended to shoot down the MiGs as they overshot their prey, the Sidewinders came a little too late for the RB-69s”



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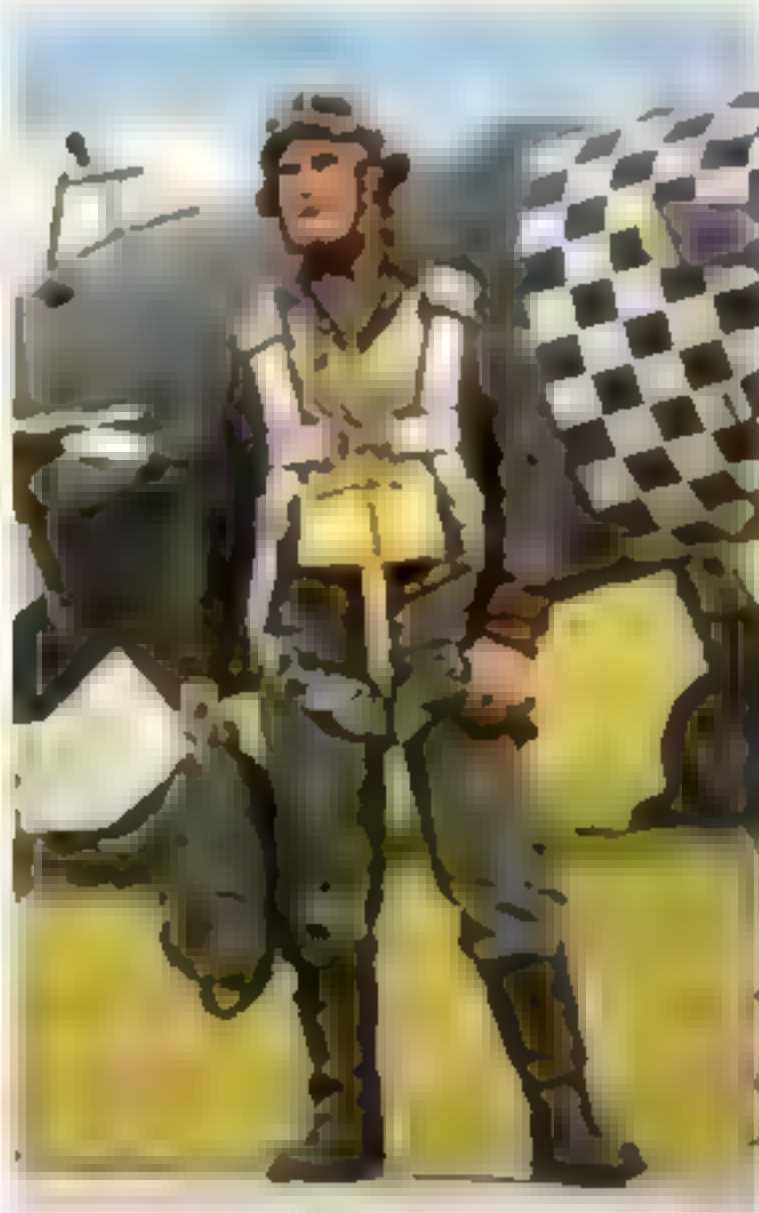
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IN THE ACT

Amid the Blitz, three Birmingham-bound Luftwaffe photo-reconnaissance missions ran into deadly opposition, as **Steve Richards** explains

Often required to make several passes over a set location, crews involved in photo-reconnaissance missions routinely faced mortal danger. Those attempting to photograph the damage caused by a previous night's air raid were always anticipated by the defenders, which made the photo-reconnaissance task even more hazardous.

On the night of November 19-20, 1940, Birmingham

suffered what was arguably its worst bombing raid of the war. The following morning, despite low cloud and poor visibility, a Junkers Ju 88A-5(F) of reconnaissance unit 3.(F)/121, (WrkNr 0458) coded '7A+FL', took off from its base at Dinard, France. It flew to Coventry, Birmingham and Bristol, to obtain photographic evidence of the recent attacks. The film was never processed.

Having taken off from their base at Pembrey, near Carmarthen, Flt Lt Geoffrey

Haysom and Fg Off Ellicott Chapple of 79 Squadron (Red Section 'A' Flight) were on their second patrol of the morning. They were near Pembrey at 20,000ft when the fighter controller made them aware of a possible enemy aircraft flying west at a height of 14,000ft and subsequently 5,000ft. They were told to patrol Cardigan at 8,000ft. Just as the controller announced the enemy was now heading north, the two Hurricane pilots spotted an unidentified aircraft heading

south-west, parallel to the coastline, about five miles out. Haysom, in Hurricane V7022, led his number two in Hurricane P3100 towards the as yet unidentified machine which they suspected to be a Blenheim. The mystery aircraft dived quickly to lose another 2,000ft, followed by the two Hurricanes. Haysom positioned himself on the starboard beam to get a better look and then crossed over to the port side, still unsure as to what type he was looking at. Immediately, tracer bullets were seen being fired astern,



Left and below
The Germans took a vast number of reconnaissance photos over Britain before and during the war. Birmingham with its many armament factories was given much attention. Here we have a 'before and after bombing' pair, the latter being taken in November 1940
Via author



which Haysom took to be the rear gunner testing his weapon. The now menacing machine turned towards the leading Hurricane and Haysom clearly saw "swastikas" on the wing tips and fuselage. Indeed, this was Ju 88A-5 7A+FL which, having completed its reconnaissance mission, was making its getaway across the Welsh mountains to the Irish Sea. Now confident he was dealing with an enemy aircraft, Haysom closed to 200yds and fired a burst, he fired another at 100yds and finally one at 70yds, each burst being of five seconds duration. During the attack,

Bottom
This Junkers Ju 88A carries its factory codes CD+OK. It is believed to have been delivered to 3.(F)/121 where it would likely have been marked as 7A+OL
EN Archive



Right

A Luftwaffe reconnaissance crew prepare for a forthcoming mission
Via author



Right

Both fixed and hand-held cameras were available for reconnaissance missions. Here a Luftwaffe crew member is being issued with a hand-held camera which he would have operated from the bomb-aimer's position in the nose
Via author

Below

By 1941, a dedicated series of reconnaissance versions of the Ju 88 was introduced. These were given the designation Ju 88D (Dora). This aircraft is of (F)/122
Chris Goss

the Luftwaffe gunner replied, but both the Junkers' engines poured out a white vapour and bits were seen to fall away from the engines and rudder. Haysom then broke away to starboard, making way for Chapple to complete the attack.

The Ju 88 was clearly in trouble and dropped to 500ft with the two Hurricane pilots watching its inevitable demise. The white vapour stopped and soon both engines caught fire. The critically damaged aircraft hit the sea at Strumble Head six miles from Fishguard. The crew were never found.

Haysom (with his oil pressure at zero) and Chapple returned to Pembrey, landing at 1344hrs. The interception was timed at 1320hrs; they had been airborne for just over an hour.

That night, Luftwaffe bombers returned to Birmingham and delivered a sizeable attack. Just two nights later, a third serious raid took place. These attacks, especially the last one, reduced the city's water supply to about 20%. Had the Germans returned on the next night, November 23-24, the ability to combat fires would have been totally inadequate. In the event, the Luftwaffe's effort was turned towards Southampton.

On-board correspondent

Twenty-four hours after the doomed flight of Ju 88A-5 7A+FL, another reconnaissance mission was launched to photograph the city. The aircraft used was Junkers Ju 88A-5(F) (WrkNr 435, F6+?M) of





Left
Hurricanes of 79 Squadron, part of 10 Group in autumn 1940, had spent the summer months in the more active 11 Group. Nevertheless, Flt Lt Haysom successfully brought down a reconnaissance Ju 88 on November 20, 1940
Via author

“The Ju 88 was clearly in trouble and dropped to 500ft with the two Hurricane pilots watching its inevitable demise”



Above
Photo evaluation in progress. Interestingly, the Germans did not use a stereoscopic system and so post-war analysis deemed their interpretation inferior to their counterparts at RAF Medmenham
Via author

4.(F)/122 which crash-landed back at its base of Melsbroek, Belgium.

Then, in January 1941, an article of note appeared in the Luftwaffe newspaper *Der Adler*, a German propaganda publication. An English language edition was available for overseas readers. The story was written by war correspondent Hans Herbert Hirsch, telling of a recent reconnaissance flight over Birmingham. It gives no date for the mission but says it took place the day after a heavy raid and as a precursor to future attacks. The only known reconnaissance flights that immediately followed

a sizeable attack on the city were those conducted on November 20 and 21, 1940.

We know the first of these was shot down over Wales and the second made a crash-landing upon its return to base. If the broad content of the article is taken as true and details such as reference to the still-burning ruins from the previous night's heavy attack are to be believed, then the author sees this story as relating to that of Ju 88A-5(F) (WrkNr 435) on November 21, 1940. Either way, the article makes for exciting reading; typical *Boy's Own* type fare. “Once again, we had received

a mission order. Last night Birmingham had been the target of German Kampfgeschwader, and aerial photographs had to be made of the effect of the attacks. The good old Ju we had used on our last few flights was in the repair workshop, so we had to take another machine.

“Even during the outward flight, the pilot noticed that the right engine was running unevenly, but he was a typical reconnaissance pilot and did not give up; he was determined to fulfil his mission. Then the city which had been hit so devastatingly the night before came into sight. Things



Above
Reconnaissance missions over Britain were vulnerable to RAF interceptions. Seen here is Ju 88A 7A+LH of 1.(F)/123 EN Archive

Right
The 'Der Adler' propaganda magazine issue of January 1941
Via author

Right
615 Squadron pilots were flying the Hurricane II from RAF Valley in the summer of 1941. This picture was taken the previous year when the squadron had been involved in the early stages of the Battle of Britain
Via author

were even worse here than in Coventry. Here the German Luftwaffe had hit harder than before. To rebuild the industrial installations of this city would take a considerable length of time – they had been flattened.

“The camera was running, picture after picture was taken, to give the information needed for the continuation of the assault. Due to the excitement caused by last night’s catastrophe our reconnaissance aircraft’s presence seemed to go unnoticed; only when the last photographs had been taken did small AA artillery clouds appear to the right and to the left.

“But the AA artillery seemed to have extended itself last night as all its fire was badly aimed. For a last time, we flew over the centre of the city to get photographs of a large building complex which was still partly burning. Then the engine lost power again and coughed as if it had a cold. The propeller pitch-setting was altered, the engine surged up, rpm dropped again, then the engine ran very slowly. There was no sense in continuing like that, so the pilot shut down the engine completely. We were left flying on one engine over Birmingham. We hoped no fighters turned up – the

reconnaissance aircraft would have been easy meat now. But unharmed we flew over enemy territory towards the coast.

“More and more the low and slow flying machine drew the attention of the AA artillery. Our Ju 88 was flying through a veritable net of flak bursts which it was unable to evade with only one engine, and the fire got more accurate all the time. Now and then, when we were hit by shell fragments, there were rattling noises in the fuselage and wings. The altimeter needle steadily dropped lower. Suddenly there was a loud noise in the machine. A light AA artillery shell had slammed into the fuselage. Instinctively the observer gripped his parachute harness, but nothing happened; the aircraft continued flying. Near the coast there were two more such rattlings in the aircraft. The right engine, the source of all our troubles, lost its propeller and the radiator cover, and the right elevator came loose from the tailplane. Flying very slowly, losing height continuously and with a blocked elevator, the machine reached the coast. Only a few more kilometres until our airfield.

“We had a last fright when the undercarriage would not

extend, probably also damaged by shell fragments. It could not be lowered by hand either, so the pilot decided to make a belly-landing. Twice he had to go round again, then he landed. There was a hard jolt, the machine slid 50 metres on the grass, got caught by something and turned round twice. She looked bad but it would be possible to repair her. What counted was that valuable reconnaissance results had been brought home.”

Action shot

On the afternoon of August 26, 1941, a Junkers Ju 88D-2 (WrkNr 0396) 4U+HH belonging to 1.(F)/123, took off from the airfield complex of Toussus-le-Buc to photograph





to patrol base at 20,000ft. Blue One was the Free French pilot Fg Off René Mouchotte, accompanied by his number two, Sgt Ronald Hamilton. At 1554hrs, the pair received the order to patrol Bardsey Island at 10,000ft. Just over ten minutes later, the controller informed them that a bandit was approaching from the south-east and they were given a vector of 230 degrees. A further call told them that the bandit was now heading west. Ron Hamilton soon spotted the enemy which was about seven miles distant and actually flying in a north-westerly direction at 11,000ft. The two Hurricanes went into line astern formation and flew

Left
On August 16, 1941, Hurricanes of 605 Squadron were able to shoot down Ju 88 4U+HH during a photo-reconnaissance mission. Preserved Hurricane R4118 is painted in the markings of 605 Sqn, a unit to which it was assigned during the Battle of Britain
KE Jamie Ewan

Birmingham and Bristol. A pair of Hurricane IIs from 605 Squadron based at Baginton, Coventry, took off at 1515hrs with a further pair following at 1520 but they failed to find the Junkers.

With its photography completed, the German aircraft set off for home across Wales. Observer Corps and GCI (Ground-controlled interception) were monitoring its progress. Two Hurricane IIs of 615 Squadron's 'B' Flight took off from Valley on Anglesey and were ordered



Left
This Junkers Ju 88A-1 flew with reconnaissance unit 3.(F)/123 during 1940
Chris Goss





Above
This Hurricane carried the unit markings of 605 Squadron when part of the Strathallan Collection during the 1970s and '80s
Key Collection

Right
Flying Officer Rene Mouchotte in his French uniform
Via Justin Horgan

up-sun climbing to 13,000ft. Turning 180 degrees, to the right, Mouchotte, followed by Hamilton, dived vertically onto the Ju 88.

Mouchotte wrote in his diary: "I opened fire at about 150yds range closing to 50yds, when I had to pull away quickly to avoid ramming the enemy aircraft. I did not definitely see my burst hit the target, but I was so close that I am confident all of my bullets went home." Mouchotte had managed to get in a two or three second burst with his twelve 0.303 Brownings.

The Ju 88 turned to port and dived into cloud about 1,000ft below. Mouchotte, who had temporarily blacked out when pulling away to avoid colliding with his prey, sought to re-establish contact but was unsuccessful.

Hamilton, an Australian, had followed the Frenchman and later recorded: "I followed Blue One into a steep turn and we made a vertical dive attack. I

gave a short burst allowing full deflection but did not see the results of the burst. I noticed flashes coming from the rear turret of the enemy aircraft. I pulled out after Blue One and followed the enemy aircraft into cloud. I went right through the cloud but did not see the enemy

again." Hamilton had managed to get in a two-second burst, opening fire at 250yds closing to 150yds.

The two pilots had made their attack at 1616hrs about 40 miles north of Pembroke Dock; a total of 740 rounds had been expended. Despite being given several vectors to regain contact with the enemy, the Luftwaffe crew eluded the fighters and the latter returned to base.

Down in Ireland

Having lost their pursuers, the German crew had no time to relax. One of the Jumo engines had stopped and the other was failing. The airmen elected to put down on the Irish mainland. Gefr (airman) Herbert Schulze, the radio operator, was ordered to transmit the following message: "Have been attacked by two Spitfires. One engine stopped the other damaged. Intend landing in Ireland, destroying papers onboard. We shall return after victory, Heil Hitler."





“The right engine lost its propeller and its radiator cover, and the right elevator came loose from the tailplane”



Irish Army reports describe the final minutes of the German aircraft's flight after it crossed the coast between Barrys Head and Roberts' Cove near the small fishing village of Kinsale. It flew inland at low altitude, circled over Ballady, flew southwards towards the sea again, returning once more after a few minutes.

At this point, the Ju 88 began losing height. The crew removed and threw out a cockpit side-window, then jettisoned two machine guns and probably ammunition drums also. Finally, an engine cowling fell away before the pilot, Lt Ludwig Stockbauer, made a wheels-up landing in a farmer's field near the village of Belgooly, County Cork.

Nearby farmers and Local Defence Force (LDF) members saw the crew get out unharmed, then walk away from the aircraft to a fence about 20yds away. Having warned the locals to keep away, one of the crew fired five shots into the wreck and it caught fire. Once alight, a crew member was seen to run up to the fire and throw papers and possibly a coat into the flames. This done, the Germans willingly handed over their revolvers and pistols to the LDF men and were shortly taken to Collins Barracks in Cork.

The crew comprised Stockbauer, Lt Rudolf Lauer

(observer), Gefr Herbert Schulze (wireless operator) and Gefr Gerhard Drechsel (air gunner). They were questioned and a report submitted to the Department of Defence in Dublin. Rudolf Lauer was the oldest at 27 and spoke good English. He said the aircraft had been on a bombing mission over South Wales when two Spitfires attacked them. Each crew member gave not only his name, rank, serial number, but also their age, religion (Protestant), home address, name of next of kin and their address. From the latter, it was apparent that each airman lived in the parental home. On the evening of the following day the four Germans were taken to Curragh Camp where they were interned for the duration.

Both RAF pilots filed a combat report in which they each claimed a 'damaged'. A couple of hours after landing they learned the British intelligence 'Y' service intercepted German radio reports that the Junkers Ju 88D-2 had made a crash-landing in neutral Ireland. The 'Y' service had monitored the transmission by Herbert Schulze.

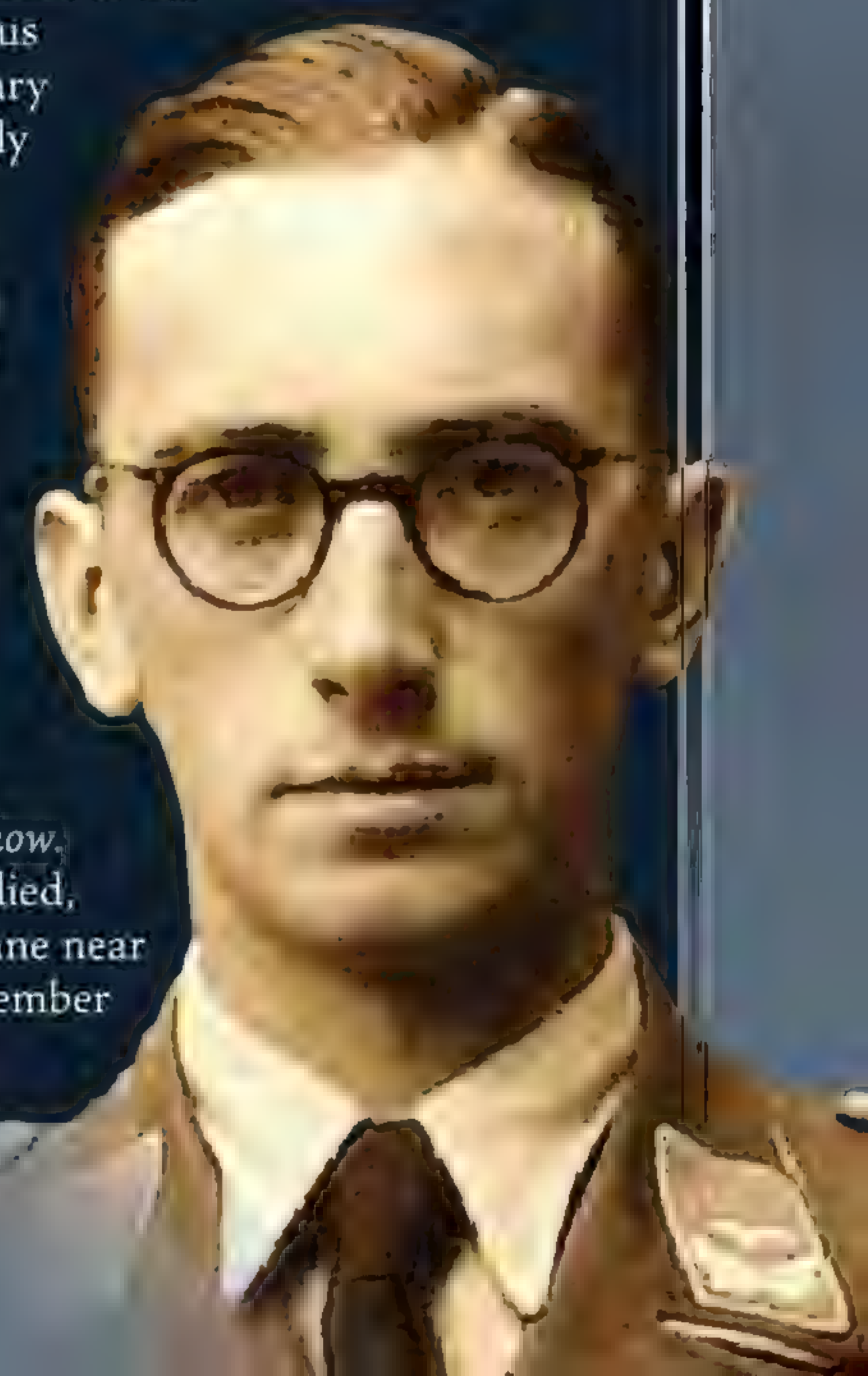
The following morning it was a groggy Mouchotte whose personal diary entry related the previous day's excitement and included how he had succumbed when being plied with many whiskies in the mess the previous evening. His diary was subsequently published by his mother.

Mouchotte was shot down and killed flying a Spitfire on August 27, 1943, a chapter being given over to this in Pierre Clostermann's book *The Big Show*. Hamilton also died, flying a Hurricane near Ostend on September 18, 1941. ●

Left
When Junkers Ju 88D crash landed at Belgooly in August 1941, the crew destroyed the wreck before any photographs could be taken. The same crew made this wooden model of their aircraft while interned in Curragh Camp
Via author

Below left
Lt Ludwig Stockbauer made a successful wheels-up landing at Belgooly, County Cork
Via Justin Horgan

Below
Lt Rudolf Lauer (observer) spoke good English having lived in Wales before the war
Via Justin Horgan



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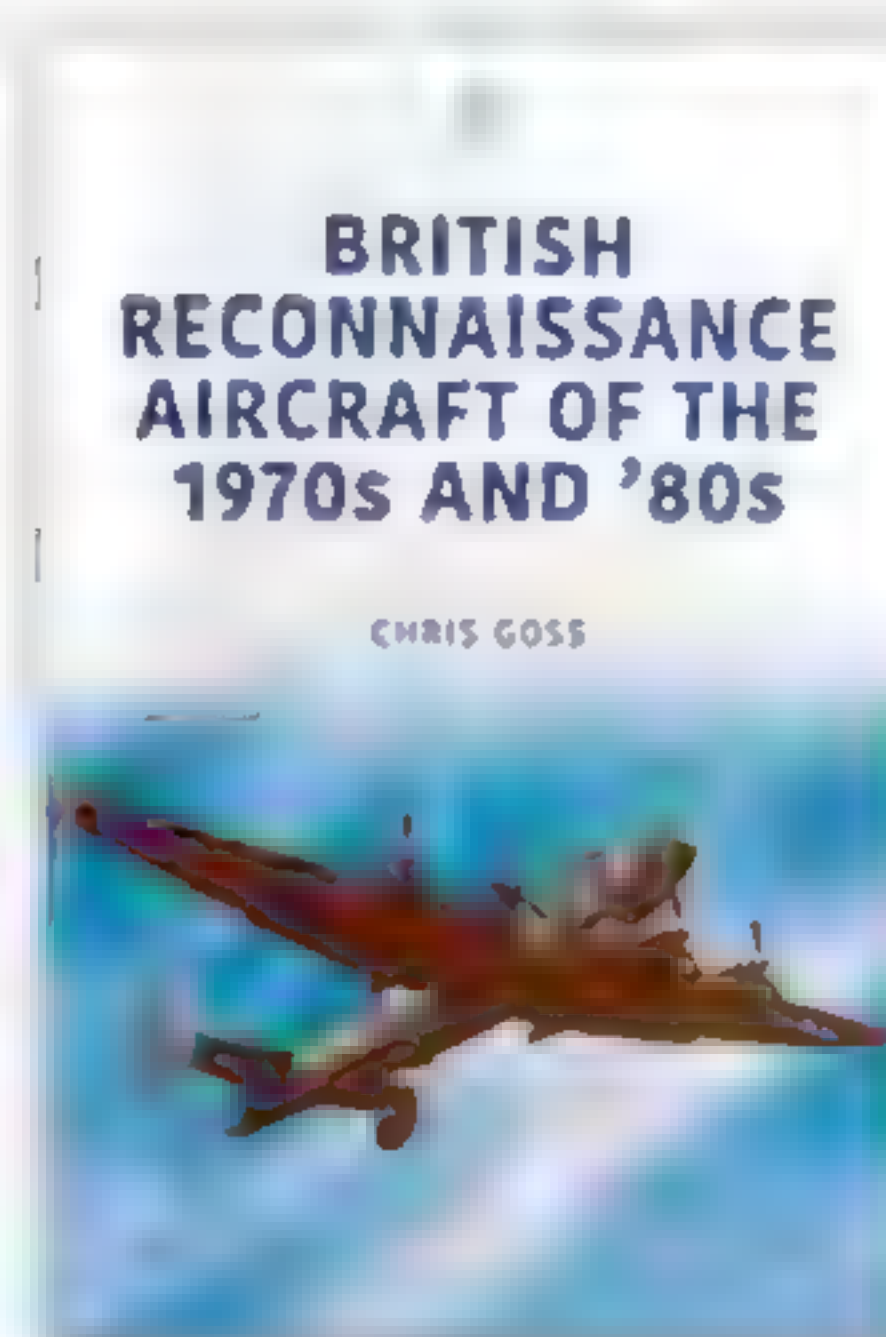
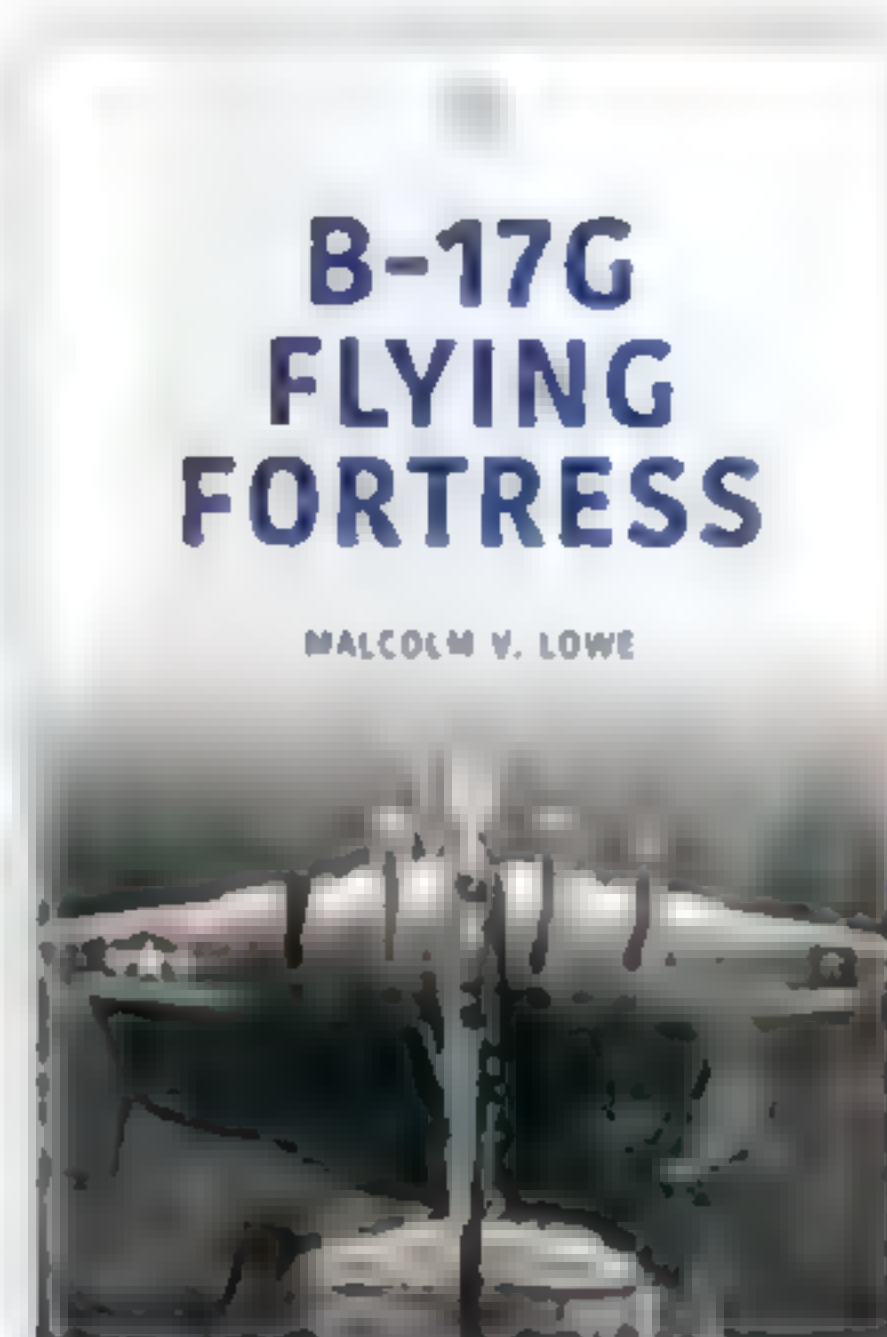
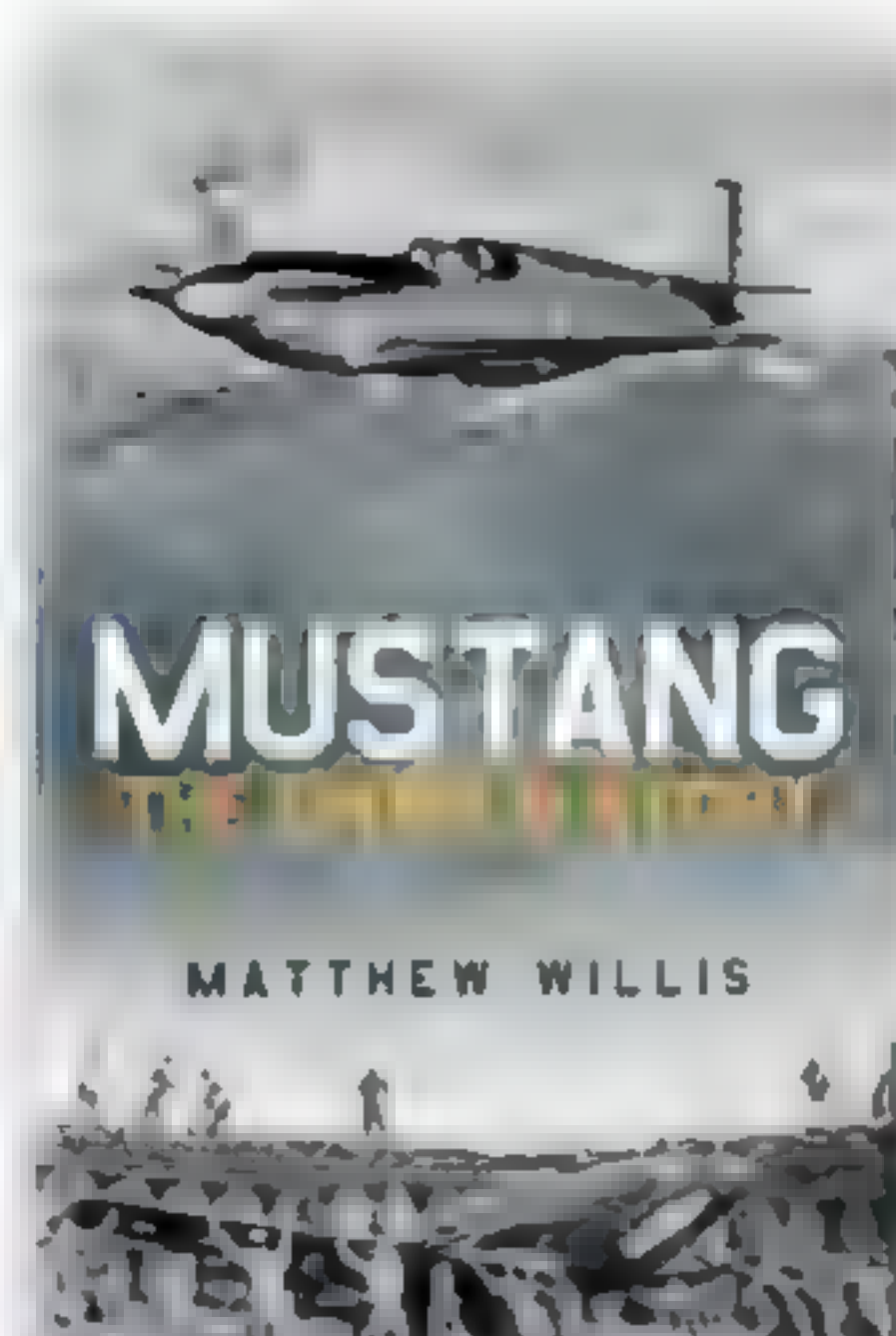
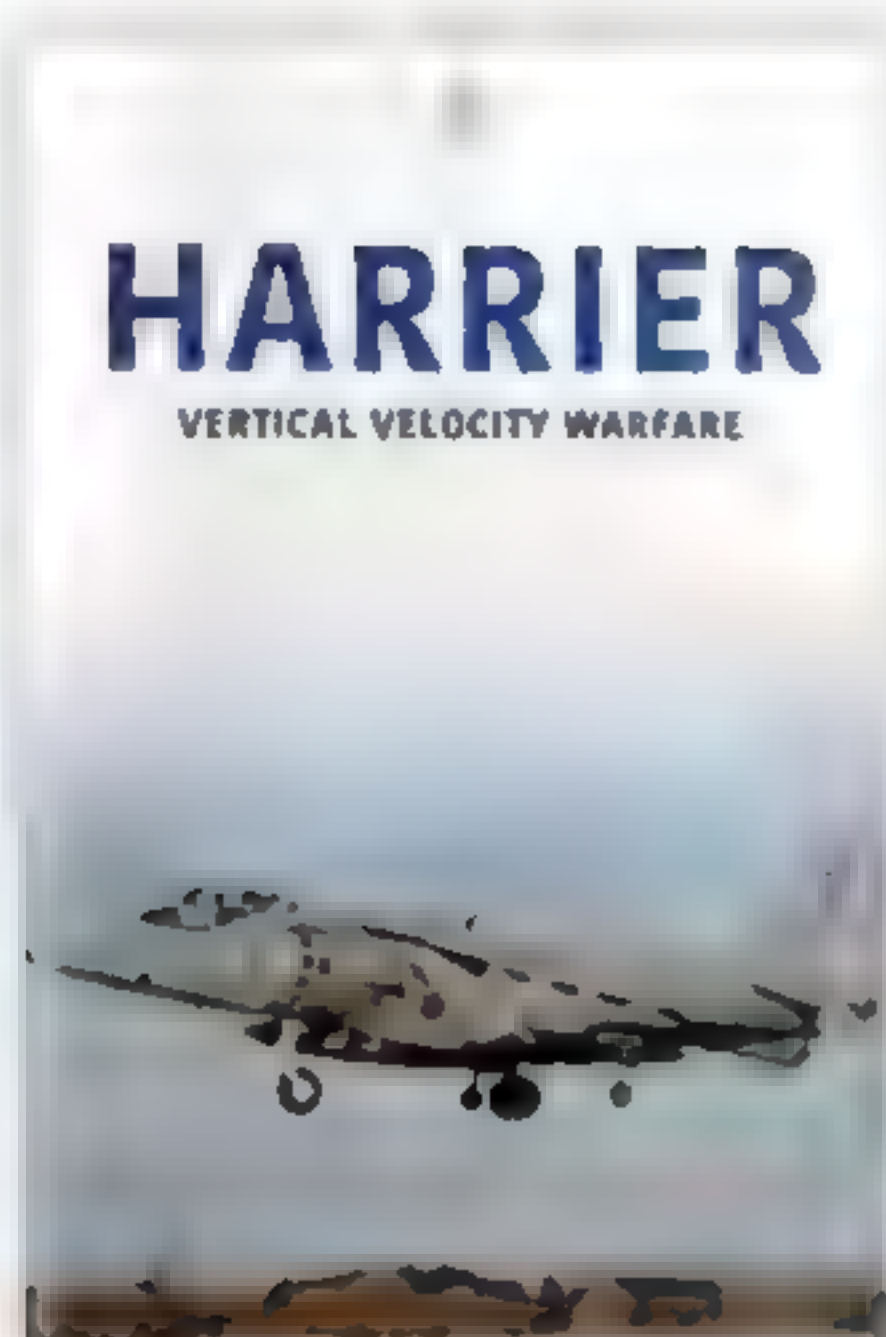
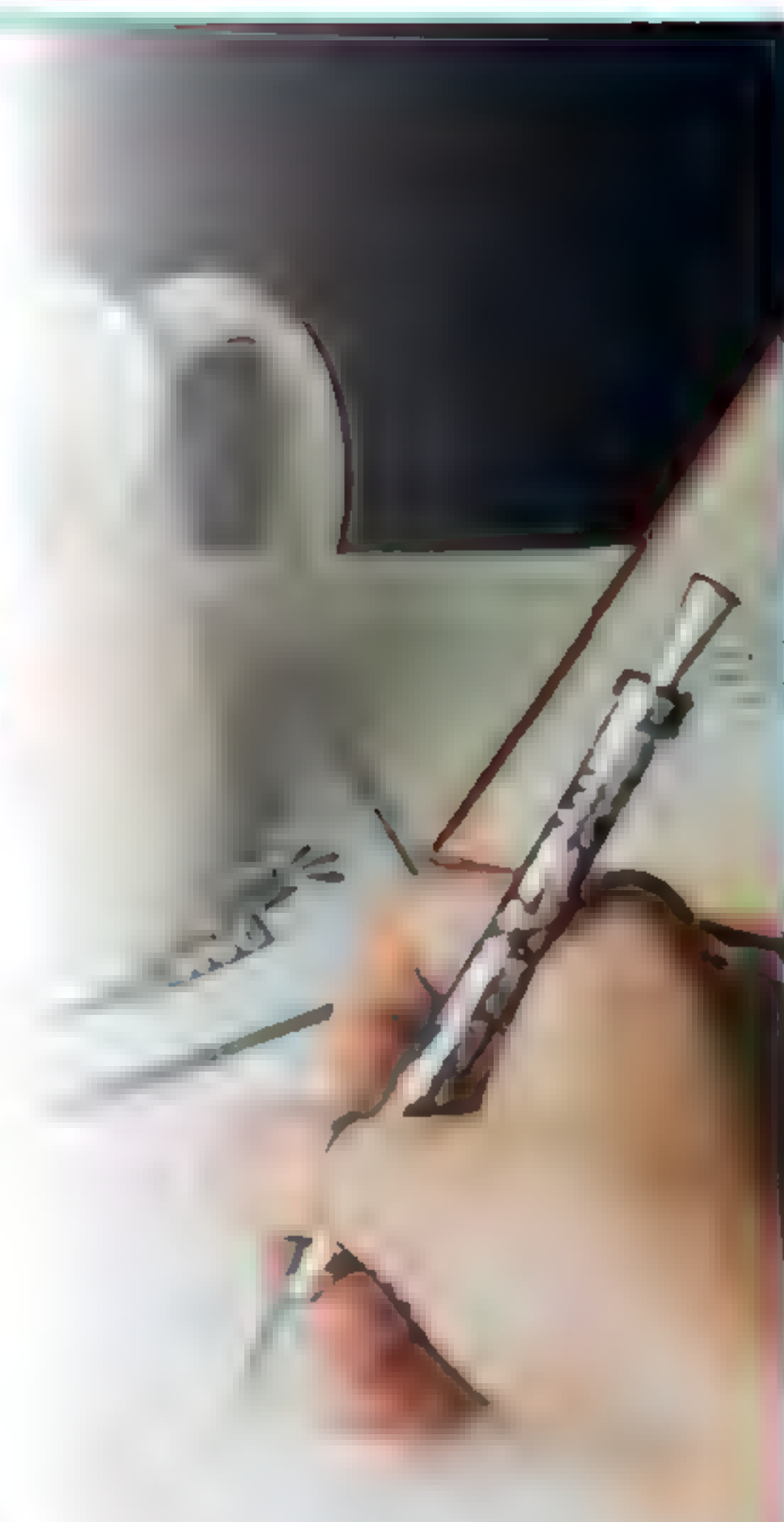
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Running the show

Following his recent retirement, **Bob Barton** reflects on the challenges and triumphs of arranging airshows at Old Warden, home of the Shuttleworth Collection



Top
Sea Hurricane Z7015, Gladiator K7985 and Spitfire Mk.Vc AR501 flying together at Old Warden
All KEY-Jamie Ewan unless noted

Above
Bob Barton was in charge of organising airshows at historic Old Warden for 12 years
Carol de Souza

In 2011, I was lucky enough to be given the job of organising the Shuttleworth Collection's flying displays at Old Warden, Bedfordshire. I soon found that putting on shows at this atmospheric location presented unique challenges. Not only did you have to put together flying programmes that would sell tickets, but you also had to accommodate the requirements of the chief pilot and chief engineer. Plus, you were organising not just one show but ten or 11 each 'season'.

In basic terms, organising an airshow involves booking appropriate aircraft within a fixed budget and then arranging

the flying programme in as attractive a way as possible. Where Shuttleworth differs from this model is that the Collection owns approximately 50 airworthy vintage aircraft, so to a degree the content is dictated by needing to utilise these aircraft as much as possible.

When I first took up the job, the policy was to find different ways to showcase the Collection's aircraft while booking the minimum number of visiting aircraft to keep costs down. This clearly wasn't working as well as hoped, because ticket sales were low. Following the success of the two Lancasters at the 2014 Shuttleworth Proms and the Vulcan displays in 2015, it was realised that we needed to spend

more on visiting aircraft to attract bigger crowds.

Early planning

During my tenure, planning for a show kicks off around about the middle of the previous season – it's at this point that dates and themes are decided. For the last 11 years there have been ten shows each season and they've generally taken place on the first Sunday of each month from May to October. Evening shows would take place on Saturdays, 13 days after, except in September and October. It's worth keeping an eye on the website, as 2024's offering will be different.

The themes are chosen by members of the senior and middle management, with input from





the display organiser. I'm proud that in my time I was able to create the Fly Navy and Race Day airshows, although rather less proud of the GA show, which never caught the public's imagination.

With themes in place, it's then time to start looking at the broad make-up of each event to determine which military assets you might need to bid for. Such bids must be made before the end of September, whether you are seeking RAF, Royal Navy or Joint Helicopter Command assets. Of course, there is no guarantee that you will get what you have bid for, and one of the many frustrations of the job is that you don't hear which assets you have been allocated until early spring of the following year. The respective teams do their best, but military requirements understandably trump those of airshows. This is particularly true when it comes to smaller shows, such as those at Old Warden, where the maximum attendance is 7,500. The big shows are generally more successful with their bids due to their larger crowds.

Fortunately, the Battle of Britain Memorial Flight can be relied on to provide support from their fleet, but even they can't be expected to support every single

show, and the military do tend to take block leave in the summer, so it's worth checking on those dates before bidding.

Multi-tasking

The next step is to generate the draft flying programmes, and this is where it becomes important to keep the chief pilot and chief engineer happy. For the former, this means ensuring that pilots are in the correct cockpits on the day to satisfy his aims for their best employment and to maintain the required display currency. It's relatively easy to accomplish for the more junior pilots as there are plenty of lighter aircraft available, but it's not so straightforward with some of the other aircraft.

To maintain satisfactory display currency, only a relatively small number of pilots are checked out on any one of the complex 'heavies' such as the Spitfire, Sea Hurricane, Lysander and Gladiator, and more challenging types like the Comet, Mew Gull, the 'rotaries' and the pre-World War One aircraft. This means that these aircraft must be programmed as often as possible, even if they don't closely fit the theme.

For example, only three pilots are current on the Comet. It's a challenging aircraft to operate as the forward view is compromised by the long nose and it has an unpleasant tendency to drop a wing. As experienced pilot Dodge Bailey once said: "The Comet was designed to cruise at over 200mph but not to take off or land!" While I was once criticised for putting the Comet in a military-themed show, I maintain that it was valid because the aircraft had been evaluated by the RAF and even carried a military tail number. Remarkably, it was seriously considered as a makeshift bomber in a plot to assassinate Hitler.

Working effectively with the chief engineer is equally important. With a fleet of almost 50 airworthy machines, there is a huge amount of work for the engineers: annual inspections and other routine maintenance, rectification and out-of-phase work. Given these constraints, a selection of relevant visiting aircraft needs to be included to fit the show's themes. These will be a mixture of 'crowd pullers' – types that will sell tickets by themselves – ➤

Above left
LeVier Cosmic
Wind G-ARUL
displaying at
the LAA 75th
Anniversary
Airshow in 2021

Above
Stu Goldspink
flying OFMC's
Spitfire Mk.IX
MH434 at Old
Warden on June 4
last year





Above
DH.88 Comet
'Grovesnor House',
Spitfire LF.IX
G-IRTY and Mew
Gull G-AEXF
appearing at
Shuttleworth's
Around The World
Airshow in 2023

and interesting machines that fit the theme.

Multiples were always a favourite of mine, such as having three or four Cessna Bird Dogs in the air together or assorted Chilton Racers or even Avro 504Ks. These plans are prone to going awry when aircraft 'go tech' or pilot availability is limited.

One basic rule is to open and close with a crowd puller, and to craft the programmes with a series of exciting displays, mixing it up with lighter aircraft or even gliders to provide contrast. Inevitably, changes are made in the days leading up to a show and sometimes even on the day itself. The chief pilot will frequently need to negotiate alterations, perhaps to ensure regulation compliance or to address any other issues. When he names crew for the Collection aircraft, he may find that he needs to move 'slots' around to ensure pilots have sufficient time between displays.

A slot is a fixed period in the programme within which an aircraft or a number of aircraft are displayed. It is crucial that slot times are adhered to, with particular emphasis placed on 'Land on time' in order to keep things safe and the display running smoothly.

Booking the stars

With the draft flying programme in hand, the next step is to start

inviting the desired visiting aircraft. It starts with an email or phone call which, if a positive response is received, is followed by sending a display agreement form that the pilot/operator must complete and return, serving as a contract between them and the Collection. However, you can't always get exactly what you want, so extra effort is sometimes required to find suitable alternatives.

Organising the commentary team is almost as important as booking aircraft. This starts by confirming availability and putting together a roster which fairly shares the duties between them. It takes a special kind of person to undertake commentary duties as their knowledge is laid on the line and they will be severely criticised if they make a mistake. I don't envy them.

I have only tried it once, when I was the display director of a small show at a village fête. As we couldn't get an experienced expert, I took it on myself. I didn't feel at all comfortable and nearly committed the cardinal sin of uttering the 'F-word' on mic! This happened when an Army Lynx helicopter was carrying out a flypast and pulled up into a wing over (rotor over?) at the end of the first pass and disappeared behind some small trees on the recovery. Convinced that it was about to make a Lynx-shaped hole in the ground, the offending expletive escaped from my lips. Fortunately, my reflexes pushed the mic away from my mouth, so it was not heard by the crowd.

The Shuttleworth commentary team is dedicated and highly

Right
The Shuttleworth
Collection's
1916-built
Sopwith Pup
(G-EBKY) with
the then newly
restored Beagle
Pup prototype
(G-AVDF) at the
Flying Festival of
Britain drive-in
airshow



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Above
The Battle of Britain Memorial Flight's Lancaster flying at Old Warden. The BBMF frequently appear at Shuttleworth airshows

experienced. My standard response to those who criticise them is "Let's see how well you would do." We do provide notes for the commentators – the so-called black book – complete with photos of the displaying aircraft to avoid misidentification.

All in the detail

Display agreements tend to trickle in during the months before the first show of the season. A few pilots and operators do have to be chased

for a response, leaving things as late as a week or so before the show.

Early in the off-season it is necessary to apply to the CAA for permissions for the shows and for the various exemptions that are awarded to Shuttleworth to enable them. These include such things as long-term practice permission, the dropping of articles (bags of flour, streamers, etc), landing with other aircraft on the runway with suitable separation and an exemption to allow Collection aircraft capable

of exceeding 250 KIAS (indicated airspeed in knots) to do so.

There are several exemptions unique to Shuttleworth that recognise the limitations of operating such a diverse fleet. One is to allow flypasts at reduced lateral separation than the CAP 403 regulation usually stipulates. This is based on the speed and turn performance of the aircraft associated with a maximum flypast height, but can only be used by pilots who have had a formal brief on the requirements.

Application for permissions is a lengthy, detailed and frankly tedious online form that must be completed for every show, with much of the data regurgitated repeatedly. The CAA do turn the applications around quickly, but it is best to get them in as early as possible.

The next task, four weeks before the show, is to send briefing packs to the visiting pilots. This consists of a copy of the permission, a general visiting pilots' airfield brief, the CAA srg1327 document that they must complete and return, along with a document checklist advising that they need to provide the latter, plus a copy of their display authorisation, a copy of their insurance details and a commentary brief. With

Right
Seven Hurricanes at the Shuttleworth Collection's 2019 Military Airshow – the largest formation of the classic fighter in modern times



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Above
Stu Goldspink
floats through
Bedfordshire skies
in Shuttleworth's
delightfully
charismatic
and faithful
Bristol Boxkite
reproduction

multiple events to plan, this becomes a rolling task through the season. It involves a lot of checking and chasing anything that is missing or wrong.

Showtime!

With everything in place, we come to the first show of the season: the Premiere. Everyone arrives early, with engineers and volunteers moving the aircraft outside and preparing them for action. Meanwhile, in the office, we print off the Met, Spot Winds, Luton and Cranfield TAFs and the draft flying schedule, known at Shuttleworth as the Ops Programme. These are prominently displayed for pilots to consult. Finishing touches are

put to the commentators' notes and the specific day's information is added to a PowerPoint display brief.

At the briefing, the duty pilot runs through the presentation and the chief pilot makes any necessary amendments to the programme. These can range from minor tweaks to a totally new schedule if necessary. Weather is the main adversary – if it's raining we will create a display of only metal aircraft or, if it's too windy, lighter aircraft such as the Edwardian and World War One types will be dropped.

The display briefing happens two hours before the show starts and is attended by all participating pilots and other

key staff. Any pilots unable to attend must have a face-to-face briefing when they do arrive or, if they're arriving airborne on slot, they must have a telephone briefing. The duty pilot carries these out in RAF style and the chief pilot runs through the flying programme, ironing out any knotty little problems – such as a pilot wishing to launch before his slot time to gain altitude or join up with other aircraft.

Once the briefing is over, my duties are complete and I hand responsibility to the flying display director and flying control committee who 'honcho' the show itself, making any changes necessary on the day. Afterwards, the pilots and other key members of the airshow team gather for a 'hot debrief', where the show is discussed principally from a safety and engineering point of view. This done, the successful Premiere is over, with all the above to be repeated several more times during the season.

Having greatly enjoyed my 12 years as Shuttleworth's display organiser, I have now retired and wish my successor all the best for the future. www.shuttleworth.org

Right
Richard Crockett
airborne in the
Collection's
remarkable
1923-built
English Electric
Wren



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The Shuttleworth Trust's Hawker Tomtit is the sole survivor of a type that influenced the construction of many more famous Hawker fighters. **Darren Harbar** examines this immaculately restored biplane's storied history



LAST SURVIVOR



An undeniably beautiful product of its age, the Hawker Tomtit is among the legendary Sir Sydney Camm's earlier designs. Camm, of course, went on to breathe life into the Hurricane and many other important creations. The design of the Tomtit did in fact prove highly influential, and it has perhaps not received the credit it deserves.

In total, Camm drew up a remarkable 52 types for Hawkers – at one point in the 1930s, 84% of Royal Air Force aircraft had been designed by the 1893-born Englishman. Having started out as a carpenter with the Martinsyde Aircraft Company, Camm quickly moved to the drawing office where he developed the skills that led to him joining the H G Hawker Engineering Company in 1923. Taking over from Wilfred George Carter, the first project he completed was the Hawker Cygnet. Camm was duly promoted to chief designer in 1925.

Metal construction

During the mid-1920s, the RAF was seeking a replacement for its World War One-era Avro 504N training aircraft. The Air Ministry had outlined the need for an aircraft that should have “regards to the elimination of woodworking fitter trades and be powered by the Armstrong Siddeley Mongoose five-cylinder radial engine”. It was also stated that the new trainer should

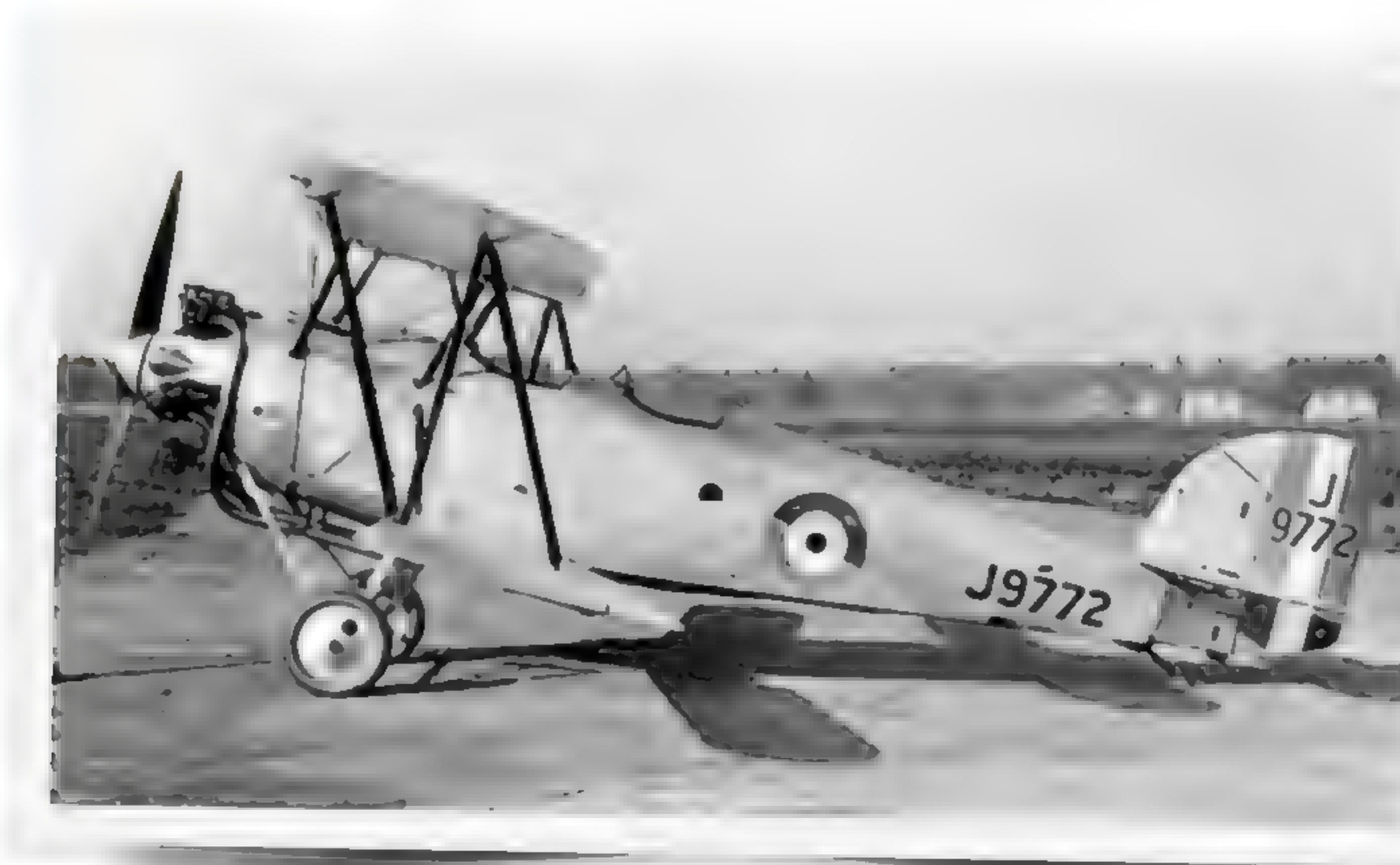
be “as nearly representative of the modern combat machine as to conform to the standards of service maintenance, having regard to the proposed elimination of the woodworking fitters’ trades”.

It was clear that the priority was to develop a machine largely constructed from metal. In his role as chief designer, Camm had been developing a new technique that used steel and duralumin tubes, joined by brackets that created a stronger but lighter aircraft. The tubular structure was clad in wooden frames that would take the fabric covering. The spars were made with a tubular dumbbell construction that was exceedingly strong, unusually so for a trainer, but this design was part of a process that would soon be used in Hawker's classic biplanes – the Hart, Fury and Demon – and latterly the Hurricane and Tempest monoplanes.

The company initially took on the design as a private venture under Works Order No. 391/28 – it was assigned the company designation H.T.I. The aircraft was to be a significant step forward in the design of elementary service trainers, also being the first to include the Reid and Sigrist blind flying panel.

The first Tomtit was built between July and September 1928 and was flown for the first time from Brooklands by P W S Bulman in November of that year. It was initially fitted with an Armstrong Siddeley Mongoose IIA powerplant, offering 130hp, but this was replaced with a

Left
The Shuttleworth Collection's airworthy Hawker Tomtit is the only surviving example of its type
All Darren Harbar unless noted



Left
The Hawker Tomtit prototype J9772 is pictured at Martlesham Heath
BAE Systems

Right
The Shuttleworth
Collection's
wonderfully
restored Tomtit
G-AFTA flying
in 2023



more powerful 150hp Mongoose IIIC later on.

The aircraft made a public debut at the 7th International Olympia Aero Exhibition, London, in July 1929, alongside Hawker's new Hart fighter. The latter inevitably garnered the greater attention. At the time, the trainer was not wearing a serial number and was sporting a pale blue colour scheme. The Air Ministry took it on charge for trials at Martlesham Heath in Suffolk for basic handling assessment. The aircraft was then allocated the service serial J9772. Further trials were conducted from August 1929, but such was the confidence in its advanced design that an order had already been placed for ten aircraft in March.

Military career

Once the Aeroplane and Armament Experimental Establishment had completed the required trials, the aircraft entered service evaluation with No.3 Flying Training School (FTS) at Grantham, Lincolnshire. At the time, the Air Ministry's research and medical departments were seeking new methods to develop pilots' blind flying skills, and to evaluate the Reid and Sigrist blind flying instrument panel. The prototype thus passed to No.24 (Communications) Squadron between July 1930 and May 1933 before heading to the Central Flying School (CFS). By this time the RAF had placed a further

order for the trainers.

The first production batch of ten aircraft were allocated serials J9773 to J9782 and were built between 1929 and 1930. These all went initially to No.3 FTS at Grantham, but J9779 was passed to No.3 (Fighter) Squadron in July 1931. J9776 and J9781 joined No.24 (Communications) Squadron, while J9780 and J9782 passed to the CFS. The second batch comprised six aircraft, serial numbers K1448 to K1453,

which again passed initially to No.3 FTS at Grantham. Two of these later went to the Canadian Department of National Defence. The third batch concluded the production with eight aircraft (K1779 to K1786) delivered in January 1931 and spread to a wider range of units.

One of the RAF aircraft, K1451, had been prepared as a demonstration aircraft for the Canadians, but the two that shipped to Canada in

Right
Pictured in 1928,
Tomtit G-AASI
was fitted with
a Cirrus Hermes
engine and flew
aerobatic displays
at Brooklands
in the hands of
George Lowdell
BAE Systems



Right
Shuttleworth's
Tomtit was
painted blue
during its time
in Hawker
ownership. Note
the Spitfire-
type windscreen
adorning the
rear cockpit
BAE Systems





1930 had a different split-axle undercarriage. A further four aircraft were ordered and sent to New Zealand to serve with the New Zealand Permanent Air Force, and were allocated serials 50, 51, 52 and 53. Consideration was given to the concept of armament. A forward firing Vickers machine gun and the option to carry two 20lb bombs on wing racks was considered, but neither came to fruition. The fact that it was even an option is testament to the Tomtit's notably robust construction.

The RAF retired its Tomtit fleet in 1935. Of the 12 offered for sale, nine ended up in civilian hands. At the outbreak of World War Two, there were six Tomtits flying, all painted in camouflage schemes but with civilian registrations.

Sporting option

In addition to military commitments, a private contract for five additional aircraft was placed for a sporting variant. This saw the type fitted with a variety of powerplants including a Cirrus Hermes four-cylinder upright in-line engine, with the prototype in this configuration carrying the serial G-AASI. The Air Ministry did evaluate the re-engined aircraft, but found it lacked power, so the prototype returned to Brooklands where Hawker pilots and the local flying school made use of it for a couple of years. It was here that

flying instructor George Lowdell performed aerobatic displays in G-AASI.

The sporting variant of the Tomtit was to prove popular, and two examples were entered into the 1930 Kings Cup Air Race. Notably, G-AALL was flown in the race by Sqn Ldr D S Don, CO of No.24 (Communications) Squadron, the unit that had played a role in evaluating prototype J9772. *Lima-Lima* finished the race in 18th position; not bad for a trainer that was competing against dedicated racers.

Another engine development saw a few of the sporting Tomtits fitted with a Wolseley AR.2 radial in May 1931. Although

the lighter engine showed potential, there were some issues with its exhaust system. A new version called the AR.7 seemed to solve the problem, and this engine was fitted to G-ABAX, which competed in the 1932 Kings Cup Air Race. The same aircraft, now with a faired-over front cockpit, also competed in 1933 with George Bulman at the controls, sporting the racing number 9 on the rudder. Wolseley-fitted Tomtits went on to race throughout the 1930s. By 1935, when the RAF was retiring its small fleet of aircraft, a further nine moved into civilian ownership with military Mongoose III engines.

Sole survivor

Despite its obvious popularity, only 36 Tomtits were produced between 1928 and 1931. It's often suggested that production would have continued were it not for the Hart being in such demand. Of all the aircraft to roll off the limited production line, the last Tomtit is also the only remaining example of this ground-breaking type.

Trainer K1786 was rolled out in 1931 and allocated to No.3 FTS where it was given the silver RAF colour scheme that it still wears today. Its post-service career saw it pass through the hands of several

Left
Shuttleworth's Tomtit is painted in the eye-catching silver colours it wore during the 1930s with No.3 Flying Training School

Below
Jean-Michel Munn flies over a patchwork of Bedfordshire fields during last August's photo shoot



Right
Another view of
Old Warden's
magnificent
K1786, the
world's only
Hawker Tomtit



owners. Allocated the civilian registration G-AFTA, it was purchased from the RAF in 1939 and given a complete overhaul and rebuild by Field Aircraft Constructions. Paperwork held by the Shuttleworth Trust details this process. It's thought that a Spitfire-type screen was fitted to the rear cockpit, and with work completed the aircraft was test flown on April 17, 1939. It was passed to the Leicestershire Aero

Club the following week, but its time there was swiftly curtailed following a heavy landing accident on June 4.

Details of the incident remain sketchy, but a logbook entry in July 1939 revealed that the aircraft was returned to Field Aircraft Constructions for repair. Reporting on the incident, C Brian Field noted that the Tomtit was delivered there by road and that the company fitted a new

front portion to the fuselage along with new top mainplanes. This would suggest that it had sustained considerable damage to the top wings, and perhaps had ended up on its nose or even its back.

Significant work was also undertaken on the aircraft's engine. One interesting comment in the notes explains that the repairs were not completed, as "all this work stopped, prior to its completion by Leicester Aero Club (owners), owing to the advent of hostilities. The aircraft returned to Leicester in a dismantled condition by road". The outbreak of war had temporarily halted the work.

In famous hands

Ownership was transferred on February 2, 1941 to none other than test pilot and air racing legend Alex Henshaw. The Tomtit, following repairs, was flown by Henshaw on May 15, 1942, and issued a new Certificate of Airworthiness. Alex went on to utilise the biplane as a 'hack', often flying it the relatively short distance between his home at Hampton-in-Arden to the Castle Bromwich aircraft factory where he test flew Spitfires. After a long

Below
A look inside the
cockpit. Note the
Reid and Sigrist
instrument panel



day of flying, he sometimes flew home at night using the searchlights around Birmingham and Coventry to 'see' his way home. Logbooks show that a few other pilots got behind the controls from time to time, but G-AFTA was principally flown by Henshaw throughout 1942 and 1943.

The Tomtit moved to new owners in February 1946, before moving on again at the end of May to the Goodhew Aviation Company based at Kidlington, Oxfordshire. The distinctive biplane remained registered with George Goodhew until November the following year when ownership transferred to Raymond Claude Stafford Allen in Chinnor, although it's believed to have remained under the auspices of Goodhew Aviation. One interesting 'sortie' was a flight to Old Warden, its future home, on April 4, 1948.

Remarkably, it was next owned by another famous test pilot, World War Two fighter ace Neville Duke. The highly decorated airman collected the aircraft from Kidlington on April 4, 1949 and it remained his machine until transferred to the Hawker Aircraft Company in July 1950. The names of Duke's fellow test pilots, Frank Bullen and Frank 'Spud' Murphy, also

appear in the Tomtit's logbook between 1949 and 1960. Painted blue during its time with Hawkers, it was often flown at airshows. In 1950 the Spitfire-type windscreen and fairing over of the front cockpit was removed, and the aircraft was fitted with a new propeller among other alterations in preparation for that year's Daily Express Air Race.

Shuttleworth bound

The trainer remained in use with Hawkers until gifted to the Shuttleworth Collection (Trust) at Old Warden, Bedfordshire. Air Cdre A H Wheeler, aviation trustee at the time, acknowledged the offer in April 1959. He wrote: "Thank you for your letter dated 30th April, in which you offer us your Hawker Tomtit G-AFTA... We shall be very pleased to accept this aeroplane into our Collection since it is almost contemporary with our Avro Tutor, which was also a similar type of air force trainer to approximately the same specification."

In a Hawker Aircraft Company memo dated August 24, 1959, the company's Experimental Supervisor records that "the Shuttleworth Collection is now ready to accept the aircraft.

Arrangements are being made for it to be transported by road early this week to Old Warden Aerodrome".

The Tomtit was delivered on August 31 and initially placed in storage before being pulled out and re-rigged in April 1964. The first flight in Shuttleworth ownership took place on August 8, 1964, and the aircraft was flown extensively from that time. Since returning to the air, the trainer suffered undercarriage damage during a landing accident at Mildenhall in 1985 but has otherwise been a regular sight over Bedfordshire skies.

In 2011, the aircraft was withdrawn from flying so that an extensive rebuild could be carried out. It returned to the air with 'Dodge' Bailey flying the restored trainer in June 2014, but an engine issue meant that the charismatic biplane was again withdrawn from flying until a powerplant rebuild could take place. It's great to report that work was successfully finished in June 2023 when Shuttleworth's chief pilot Paul Stone took G-AFTA aloft once again.

I'm sure readers and Old Warden visitors will agree that the sole surviving example of this trainer is now looking and sounding superb. ●

Below
Tomtit K1786
at rest on the
grass at its
Old Warden,
Bedfordshire
home



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This reissued publication (2019) exemplifies the huge range of disparate aircraft types and roles in play throughout the D-Day period.

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The publication also offers seldom-covered subjects such as the Canadian 415 Squadron and its Fairey Albacores, which guarded against Kriegsmarine E-boats in the Channel.

And while much of the coverage concerns Allied air assets, it also casts light on the fortunes of two Luftwaffe units during June 6, 1944, and the following period.



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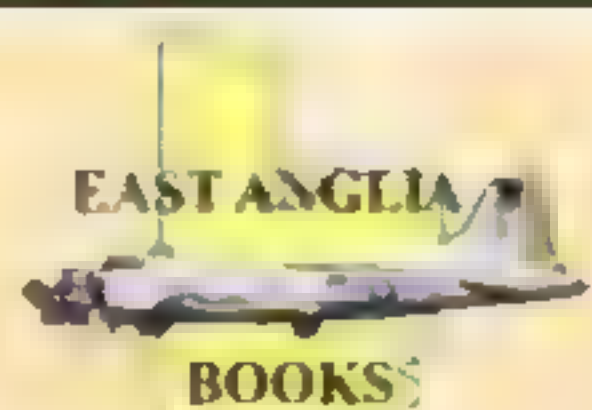
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Up there with the many highlights of the show was Nick Smith's outstanding display in Fighter Aviation's former Royal Indian Air Force Supermarine Spitfire FRXVI MV293
All images KEY-Jamie Ewan



The undoubted star of the day: Clive Denney topsides the Historic Aircraft Collection's truly incredible Hawker Fury I (K5674) during the type's Old Warden debut – a moment many had waited for since it returned to skies more than a decade ago...

The Shuttleworth Collection awoke from its winter slumber on May 12 as it opened its 60th airshow year with the traditional season premiere. Blessed with wall-to-wall sunshine, near record temperatures, and an incredible line-up of types celebrating the very best of British aviation, technology, and accomplishments from across the annals of flight, *FlyPast*'s **Jamie Ewan** joined the crowds descending on the hallowed Bedfordshire airfield of Old Warden for its 'Best of British Air Show'...





Top Andrew Wood's recently returned to the skies 1931-built de Havilland DH.80A Puss Moth (G-AEOD) was flown by Scott Butler

Above Often said to be one of the most successful British types of the post-war period, the Newcastle Jet Provost Group's T.3A (XM479 – in the hands of Mark Hooton) was a very welcome addition to the day's line-up

Left David Bremner shows off the delicate lines of his very faithful reproduction Bristol Scout C, which incorporates several original parts from the regular example flown by his grandfather – Royal Naval Air Service Flt Sub-Lt Francis Donald Holden Bremner in 1916

Far left Mercury magic: The Shuttleworth Collection's Gloster Gladiator I and the Aircraft Restoration Company's Bristol Blenheim I – flown by Jean-Michel Munn and John Romain, respectively – fill the sky with the growl of their Bristol Mercury engines



Top The Shuttleworth Collection's Peraval Mew Gull (G-AEXF) and Supermarine Spitfire Mk.V (AR501) flew together in salute of British air racing and Vickers-Armstrongs' test pilot Alex Henshaw. Having flown this very Mew Gull for his epic London-Cape Town-London record in February 1939, Henshaw went on to test fly some 10% of all Spitfires and Seafires built.

Right No Old Warden show would be complete without the Shuttleworth Collection's crown jewel – 'Dodge' Bailey putting 'Grosvenor House' the 1934 MacRobertson Air Race-winning de Havilland DH.88 Comet, through its paces.

Below Navy Wings' Fairey Swordfish I, W5856, was elegantly flown by Lt Cdr Glenn Allison. First flying on October 21, 1941, this stunning machine is 82 years old!

Below right One of three examples of the Beagle Pup dropping into Old Warden for the show, G-AVDF – seen here departing home to Turweston Aerodrome in Buckinghamshire after the event – was the prototype for what was said to be a "British engineering triumph".





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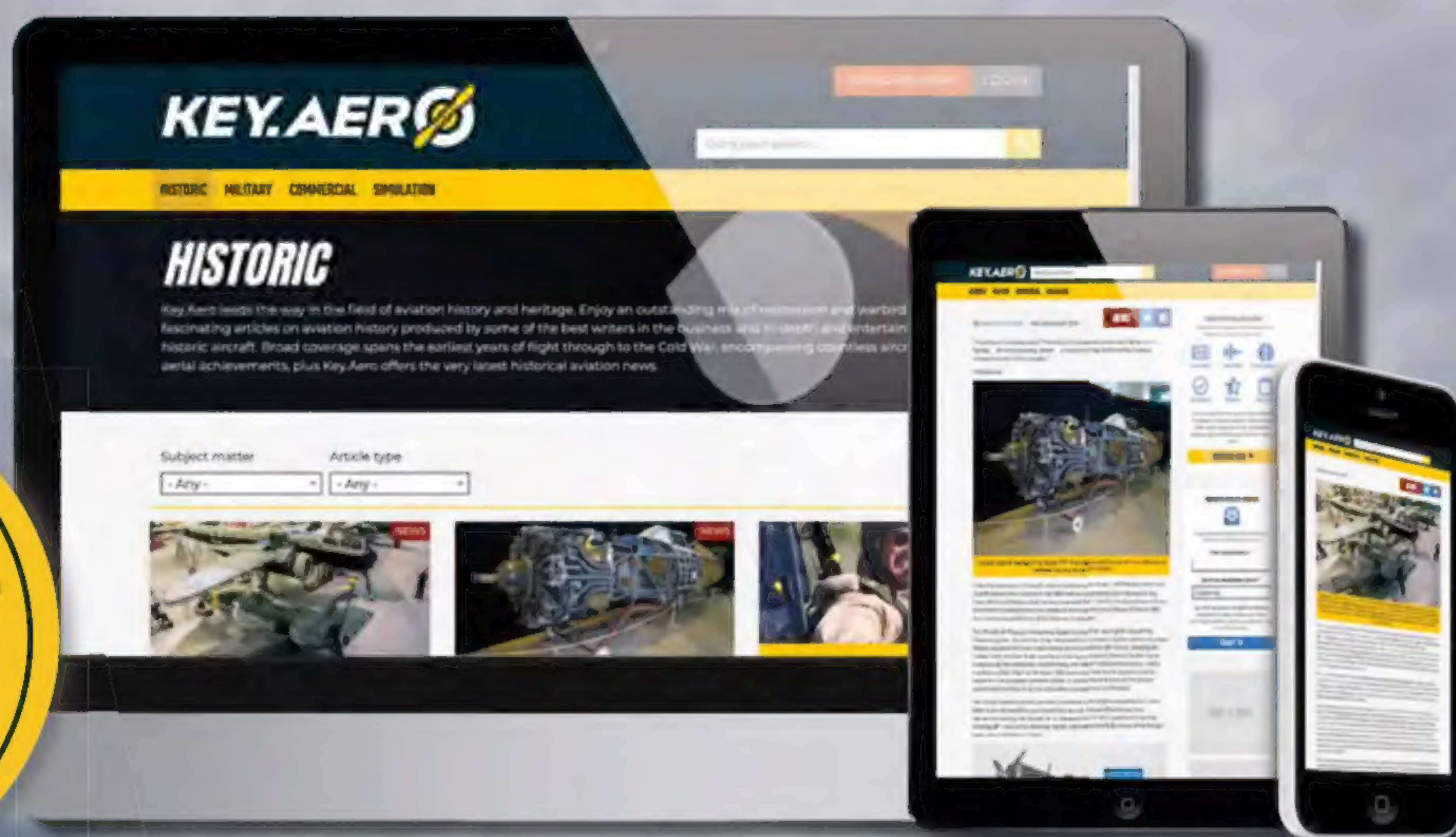
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Flt Lt Andy Preece flying the BBMF's Spitfire Mk.XVI earlier this year
Darren Harbar

AUG 2024

In next month's *FlyPast* we speak to the BBMF about the return of Spitfire Mk.XVI TE311. We also remember our magazine's first editor Mike Twite, 40 years on from the tragic loss of Varsity G-BDFT. And has it really been a decade since the Canadian Lancaster visited the UK? We take a look back. On sale from **June 27**. See page 15 for our subscription offers.

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